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 DENTON, H.R. Office of Nuclear Reactor Regulation, Director

SUBJECT: Forwards "Independent QA Evaluation of Palo Verde Nuclear
 Generating Station Units 1, 2 & 3," Vol 1, "Executive
 Summary" Vol 2, "Program Results" & Vol 3, "Potential
 Finding Reports."

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Arizona Public Service Company

P.O. BOX 21666 • PHOENIX, ARIZONA 85036

KEITH TURLEY
CHAIRMAN AND CHIEF EXECUTIVE OFFICER

ANPP-22202-KLT/EEVBjr

November 19, 1982

Mr. Harold R. Denton, Director
Nuclear Reactor Regulation
U. S. Nuclear Regulatory Commission
Washington, D. C. 20555

Subject: Docket Nos. 50-528/529/530, Palo Verde Nuclear Generating
Station, Independent Design Verification
File: 82-003-002

Dear Mr. Denton:

In our meetings with the Nuclear Regulatory Commission (NRC) on May 4, 1982, and June 29, 1982, we presented our plans regarding the Independent Design Verification program that we planned to implement for the Palo Verde Nuclear Generating Station (PVNGS). This program was instituted to give us additional assurance above and beyond our in place and ongoing Quality Assurance (QA) program that PVNGS had in fact been properly managed, designed and constructed and not because of any indications of problems. During the design and construction of PVNGS, safety and quality have been our number one concerns.

Notwithstanding Arizona Public Service Company's (APS) high level of confidence in the management, design, construction and quality assurance of PVNGS Units 1, 2 and 3, General Atomic Company (GA) was retained to perform this independent review. The selection of GA was based on its experience, technical qualifications and financial independence from APS and the other Participants in the PVNGS.

As a result of this independent review 17 Potential Finding Reports (PFR) were classified as "Findings." These "Findings" are described in detail in the attached GA report.

In accordance with our QA program, APS has issued Corrective Action Reports (CAR) against all these PFRs which will be processed and dispositioned under established project procedures. In addition APS will also evaluate all of the PFRs which were classified as "observations" and appropriately disposition them in accordance with our QA program. These will also be processed and dispositioned under established project procedures. We also plan to evaluate all the PFRs classified as "invalid" to determine if any useful information or insights can be gained.

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Mr. Harold R. Denton
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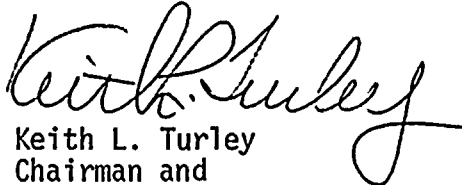
Enclosed are 50 copies each of the three volume final report by GA titled, "Independent Quality Assurance Evaluation of Palo Verde Nuclear Generating Station Units 1, 2 and 3," as follows:

- Volume 1 - Executive Summary
- Volume 2 - Program Results
- Volume 3 - Potential Finding Reports

As we indicated in our various presentations, this program was designed to ensure independence. The program was carefully managed to maintain this independence throughout and the final report is being transmitted to NRC directly by GA.

We will be pleased to meet with you and your staff to discuss the results of review.

Very truly yours,


Keith L. Turley
Chairman and
Chief Executive Officer

1b

cc: T. G. Woods, w/encl.
O. M. De Michele, w/encl.
G. C. Andognini, w/encl.
E. E. Van Brunt, w/encl.
J. A. Roedel, w/encl.
D. Sternberg, NRC, Region V, w/encl.
Lynne Bernabei, Esq., w/encl.

GA-C16924

INDEPENDENT QUALITY ASSURANCE EVALUATION OF PALO VERDE NUCLEAR GENERATING STATION UNITS 1, 2, AND 3

VOLUME 1 EXECUTIVE SUMMARY

Docket # 450-529/529/530
Control # 82/1290/35
Date 11/19/82 of Document:
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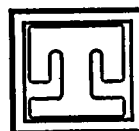
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PUBLIC SERVICE COMPANY

P.O. BOX 21666 - PHOENIX, ARIZONA 85036

GENERAL ATOMIC PROJECT 2426
OCTOBER 1982



TORREY
PINES
TECHNOLOGY

A DIVISION OF GENERAL ATOMIC COMPANY

EXECUTIVE SUMMARY

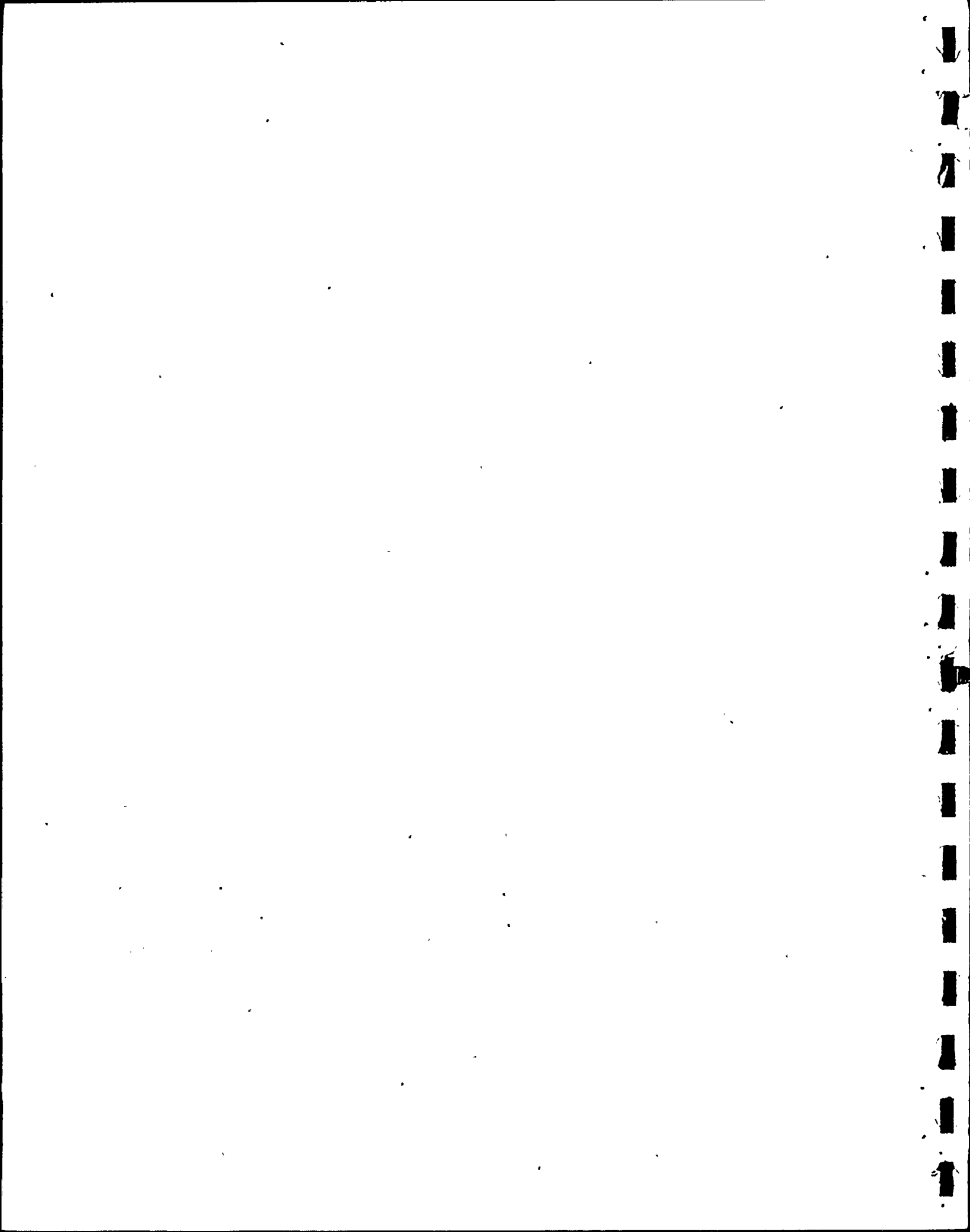
INTRODUCTION

Torrey Pines Technology, a division of GA Technologies Inc.,* (GA), was engaged by Arizona Public Service Company (APS) to conduct an independent quality assurance evaluation of the Palo Verde Nuclear Generating Station (PVNGS) Units 1, 2 and 3 in the areas of organization, management, quality assurance, design, and construction activities.

The program was structured to evaluate whether the APS nuclear project management organization, policies and quality assurance program have been adequately and appropriately structured, organized and implemented, from project organization to fabrication and construction, to assure that the high quality standards expected of nuclear power plant design and construction have been met. The review effort included technical review of selected safety-related features and physical verification of selected construction and installation details. All work was done in accordance with a program plan which was prepared early in the program and approved by the Nuclear Regulatory Commission (NRC).

The program reviewed the activities of APS, Bechtel Power Corporation (BPC) and Combustion Engineering Corporation (C-E). Over 1500 documents were reviewed, and over 15,000 checks were made of procedural implementation. Over a six month period, approximately 102 man-months of effort were applied to this program.

* Effective October 29, 1982 most of the business activities and programs of General Atomic Company have been assigned to GA Technologies, Inc., a wholly owned subsidiary of Gulf Oil Corporation and successor in interest to General Atomic Company.



The results of this evaluation program are contained in this report which consists of three volumes. This first volume, the Executive Summary, contains an overview of the program, a description of work performed, and the major conclusions drawn. Volume II, Program Results, presents a detailed description of the program, particularly of the actual work performed, the questions raised during the review, the resolution of these questions, and the conclusions associated with each part of the program. Volume III consists of a compilation of all Potential Finding Reports. It also includes all Corrective Action Plans developed, along with the review of each Plan. Volume III does not include program discussion, descriptions of the work, or any conclusions.

DESCRIPTION

The program consisted of five review tasks, a sixth task which dealt with the processing of Potential Finding Reports, and a final task covering program planning and management and report preparation.

Task A addressed the APS Project Management organization and covered organization structure, internal and external interface controls and operating procedures.

Task B addressed management's policies toward Quality Assurance (QA).

Task C addressed the QA program itself to determine if selected elements were well defined and properly implemented.

Task D addressed all procedures and controls used in the design process to determine if the basic process was adequate. A selection of design documents was reviewed to ensure that the procedures and controls were properly implemented. The design of selected safety-related structures, systems and components was reviewed for technical adequacy and for compliance with NRC-approved design bases and methodologies given in the FSAR.

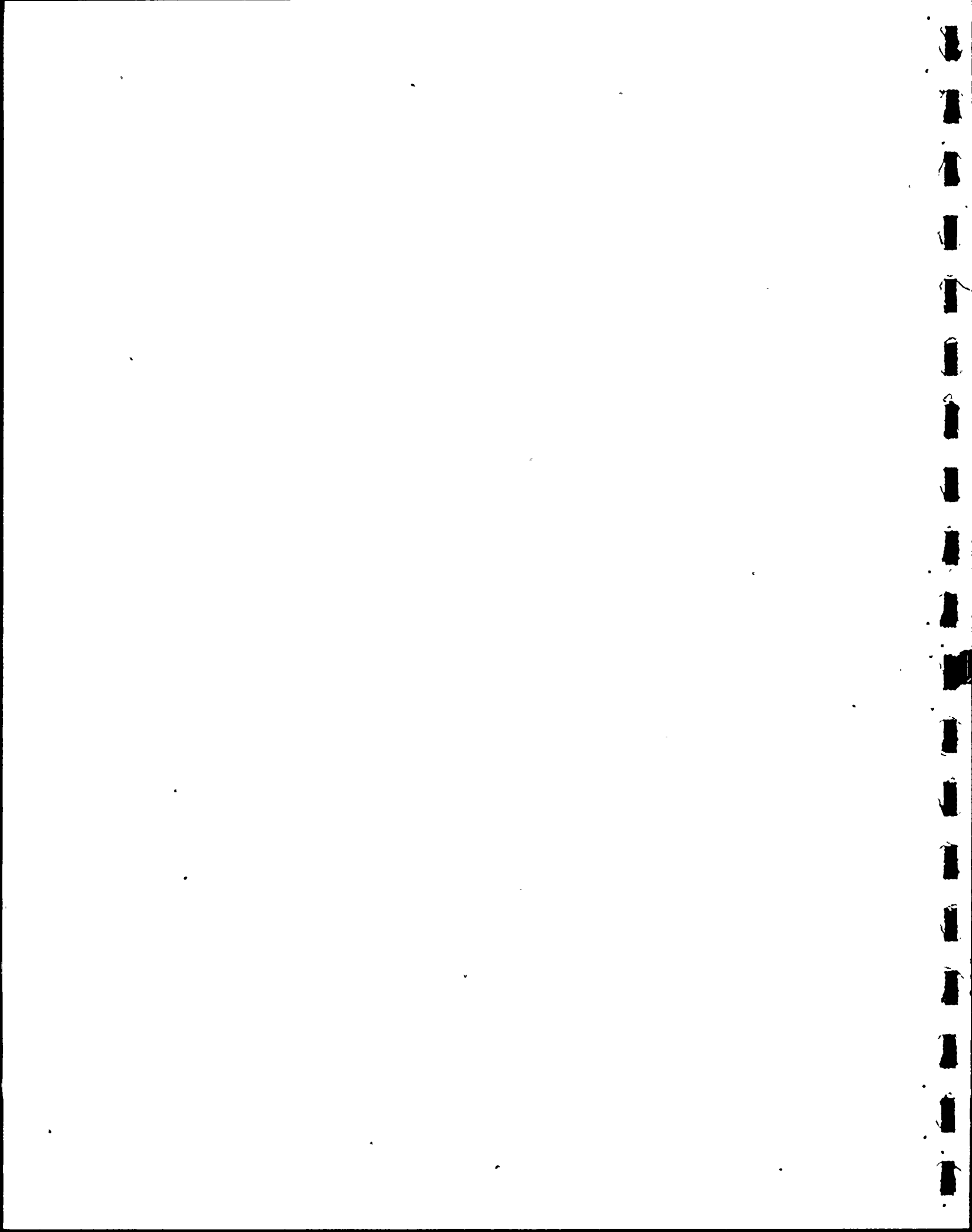
Task E addressed the field design change and as-built drawing programs to determine if they were well defined and properly implemented. The task also included a physical walkdown to determine if construction of selected safety-related systems and components was in accordance with design documentation.

Whenever during the course of the review a question was raised which was perceived by the reviewer as a valid deviation (as defined in the applicable project procedure), a Potential Finding Report (PFR) was prepared. Each PFR was reviewed and evaluated through several steps and ultimately classified as Invalid, an Observation, or a Finding. A Finding is a deviation that could result in a substantial safety hazard or an indication that there is a repetitive or generic deviation that could create a substantial safety hazard. An Observation is a deviation that could not create a substantial safety hazard. PFRs were classified as Invalid if, as a result of the report, additional information was provided to eliminate the concern. Each Observation and Finding is discussed in the appropriate section, together with its implication on the Task conclusion.

QUALIFICATIONS

GA, through its Torrey Pines Technology (TPT) Division, brought significant qualifications to its task of evaluation for APS. GA has been in the nuclear power plant industry for more than 20 years and has a large staff of capable, experienced, technically trained personnel. In addition, GA operates under the first NRC-approved Quality Assurance Program and has acknowledged expertise in quality assurance. This quality assurance evaluation of APS was conducted under the provisions of this Quality Assurance Program.

TPT has performed independent verification programs of other nuclear plants. TPT completed an extensive seismic design review of the San Onofre Nuclear Generating Station Units 2 and 3 for Southern California Edison in April, 1982. A basic design review approach, together with the associated review procedures, was developed and accepted by NRC. The seismic design review resulted in a final report which was reviewed and found satisfactory



by NRC. TPT recently completed a comprehensive, independent physical verification (walkdown) program of the Shoreham Nuclear Power Station for Long Island Lighting Co. (LILCO) using similar methodology. The results of the independent physical verification are presented in a final report to LILCO dated September 30, 1982. The same fundamental approach used in these two reviews was used in this review.

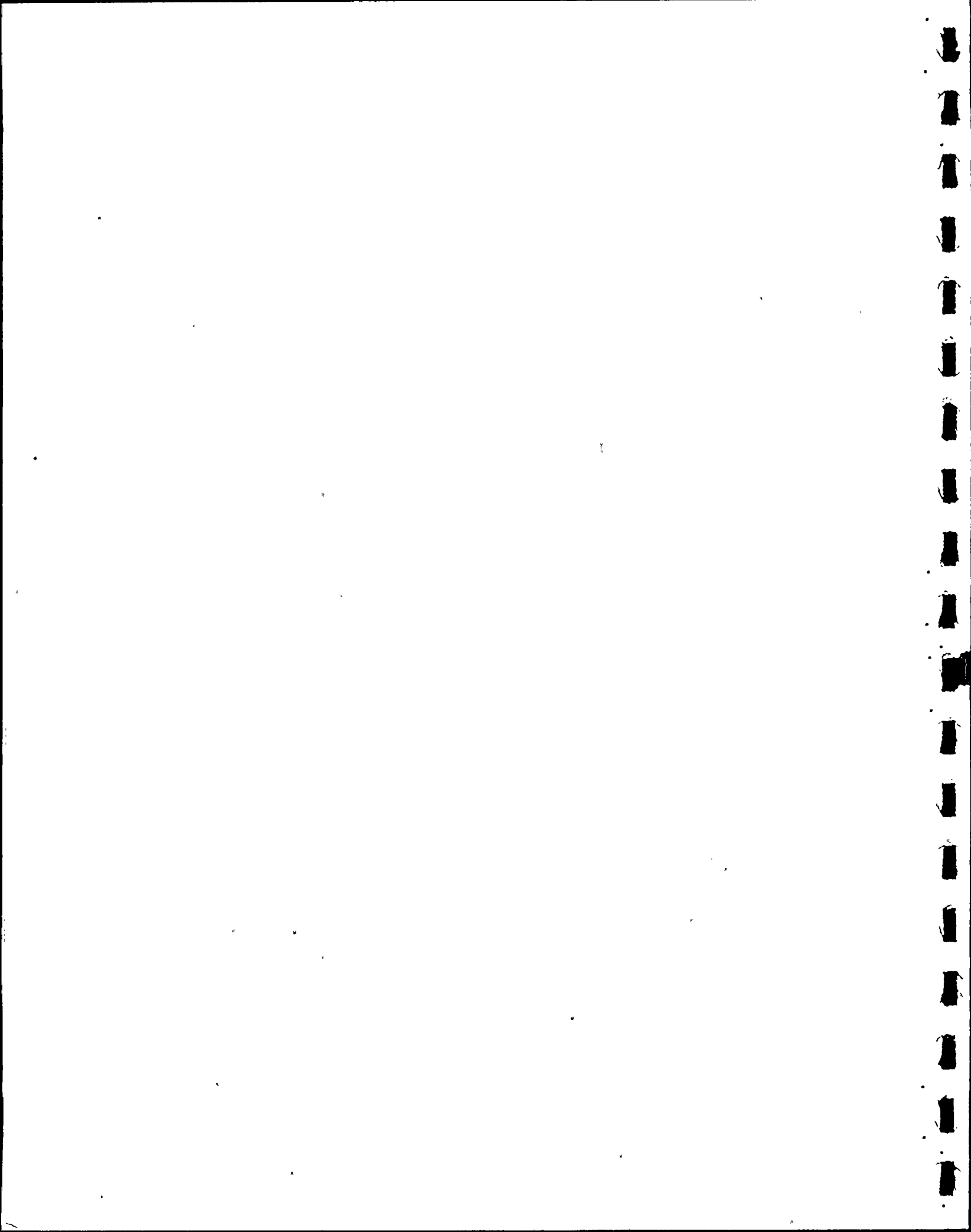
GA and all its personnel on this program are independent of APS, the managing and operating agent for participants in the FVNGS Project. Revenues from APS are not and have not been a significant portion of GA's revenues. No person working on this program has a significant financial interest in APS, nor does any person have any family member who is presently employed by APS or who is engaged directly or indirectly in the design or construction of FVNGS Units 1, 2 and 3.

COMPARISONS WITH INPO CRITERIA

The Institute for Nuclear Power Operations (INPO) has issued a document entitled "Performance Objectives and Criteria for Construction Project Evaluations," which is designed to be used in the INPO self-initiated evaluations covering quality of engineering and construction of nuclear power plants. The scope of the INPO evaluation covers a project from design through construction and testing up to the issuance of an operating license:

Compared to the criteria and objectives stated in the various section of the latest issue of the INPO document (marked "Preliminary" 9/82) this TPT evaluation of FVNGS covered over 80% of the organization and administration section, over 90% of the design control section, and over 85% of the quality programs section. Construction control (over 30%), project support (over 20%), and training (over 10%) were covered to a lesser extent. Test control was not included in the review.

However, this TPT evaluation of FVNGS included reviews in several areas not covered in the INPO document, and frequently provided a more in-depth review than is done in the INPO reviews (e.g., detailed physical verifi-



cations). Further, the INFO review specifically excludes an evaluation of the adequacy of the design. This subject was a major consideration in the TPT review.

RESULTS

Task A - Evaluation of APS Project Management Organization

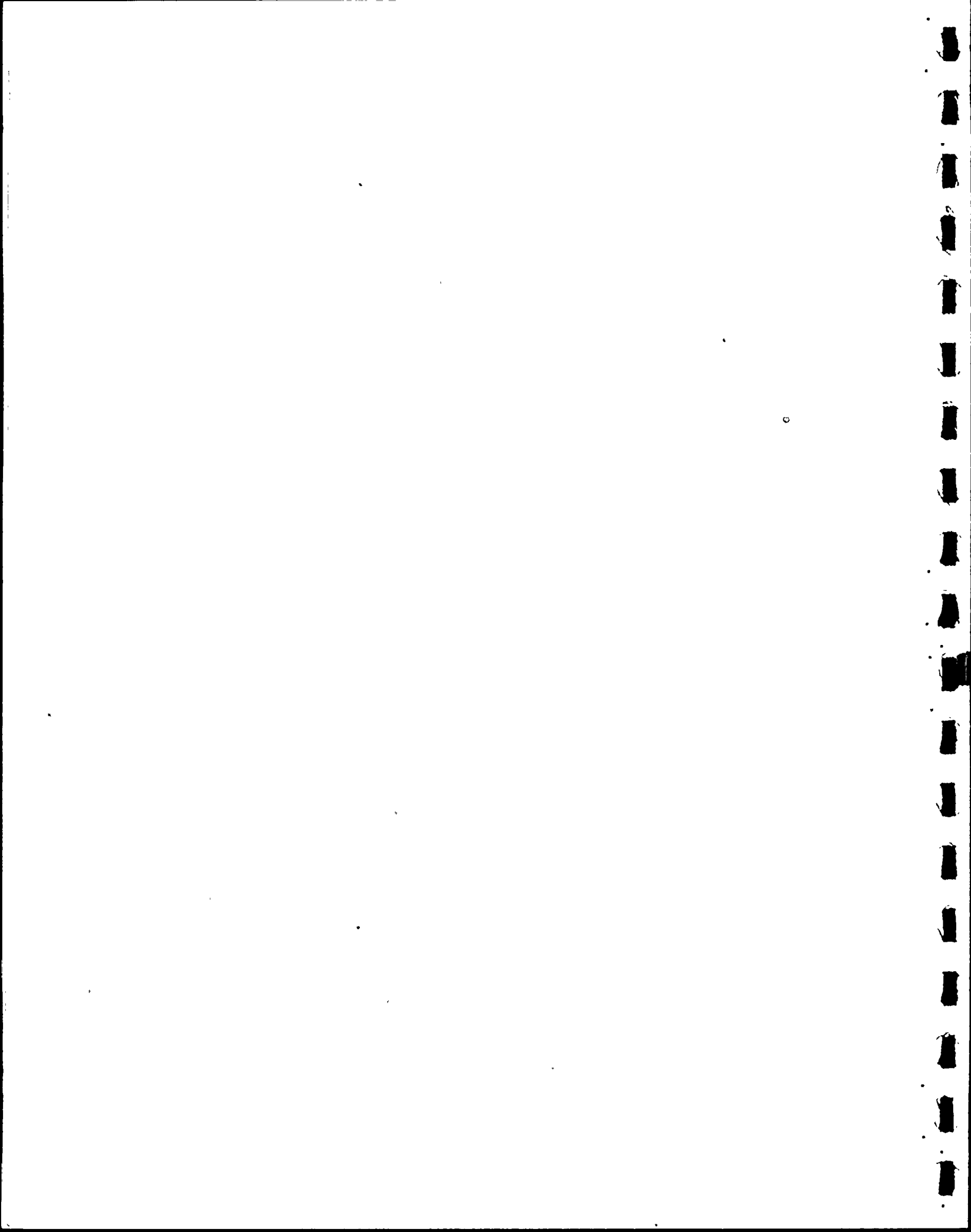
The objective of this task was to evaluate the APS Project Management organization in order to determine if it is adequately structured and organized, and has functioned in a manner to assure that the high standards expected of nuclear power plant design, procurement and construction have been met. The scope of this task included an evaluation of the APS organization structure, the APS project policies and the APS project procedures.

In the course of this review, interviews were held with 16 key APS personnel. Twenty seven (27) pertinent documents or sets of documents were examined. One man-month of effort were spent.

Two Observations resulted from this review. One of these related to the lack of a procedure to cover transfer of systems from Construction to Operations, and the other addressed the apparent lack of resolution of review comments on a procurement specification. No substantial safety impact was deduced from these deviations.

The APS organization structure was evaluated as satisfactory for providing effective implementation of project QA objectives. In addition, it was found that APS was conducting its tasks in a manner consistent with good project management practice for a major nuclear design and construction project.

The APS project policies were found to provide adequate consideration of quality, and to cover all aspects of project activities in design and construction.



The review of APS project procedures showed that there was adequate identification and control of interfaces within APS and outside of APS, and that procedures were available to clearly define responsibilities.

Based on the review in Task A, it is concluded that the APS Nuclear Projects Management Organization was adequately organized and did function in a manner to assure high quality.

Task B - Evaluation of Management Policies Toward QA

The objective of this task was to review APS management policies which affect QA and to assess the degree to which these policies ensure an effective QA program.

The scope of this task included an evaluation of the status and organizational level of the QA Department, the QA Department's access to upper management and involvement in project activities, management's involvement in QA and licensing activities, and commitment of APS management to this independent evaluation.

In the course of this review, interviews were held with 20 key APS personnel. Fifty-one (51) pertinent documents or sets of documents were examined. Two man-months of effort were spent.

Two Findings and one Observation resulted from this task.

One Finding addressed the issue of APS not having a procedure to define how the project licensing commitments were coordinated with the contents of the Design Criteria Manual. The APS Corrective Action Plan (CAP) demonstrated that there was a misunderstanding on this issue, and provided information which eliminated the basis of the concern expressed in the Finding. If this information had been available earlier no Finding would have been issued.

The second Finding addressed the issue of lower than budgeted staffing level in the APS QA Department. The review did not identify any specific safety-related problems created by the QA staffing problem identified. However, it was considered to have potential safety impact, if uncorrected. APS' CAP showed that the staffing issue would be properly reviewed and evaluated, and action taken as necessary.

The Observation dealt with apparent inconsistencies in the salary range and position descriptions for APS QA personnel relative to construction and engineering personnel. This was evaluated as being related to the above Finding and therefore, presented no safety impact not already identified.

The organizational level and status of the APS Corporate QA Department were found to be consistent with the requirements for an effective QA program. The QA department had the independence and authority necessary to do an effective job. Also, the QA department had access to APS upper management, who in turn, had a high awareness of the QA program status.

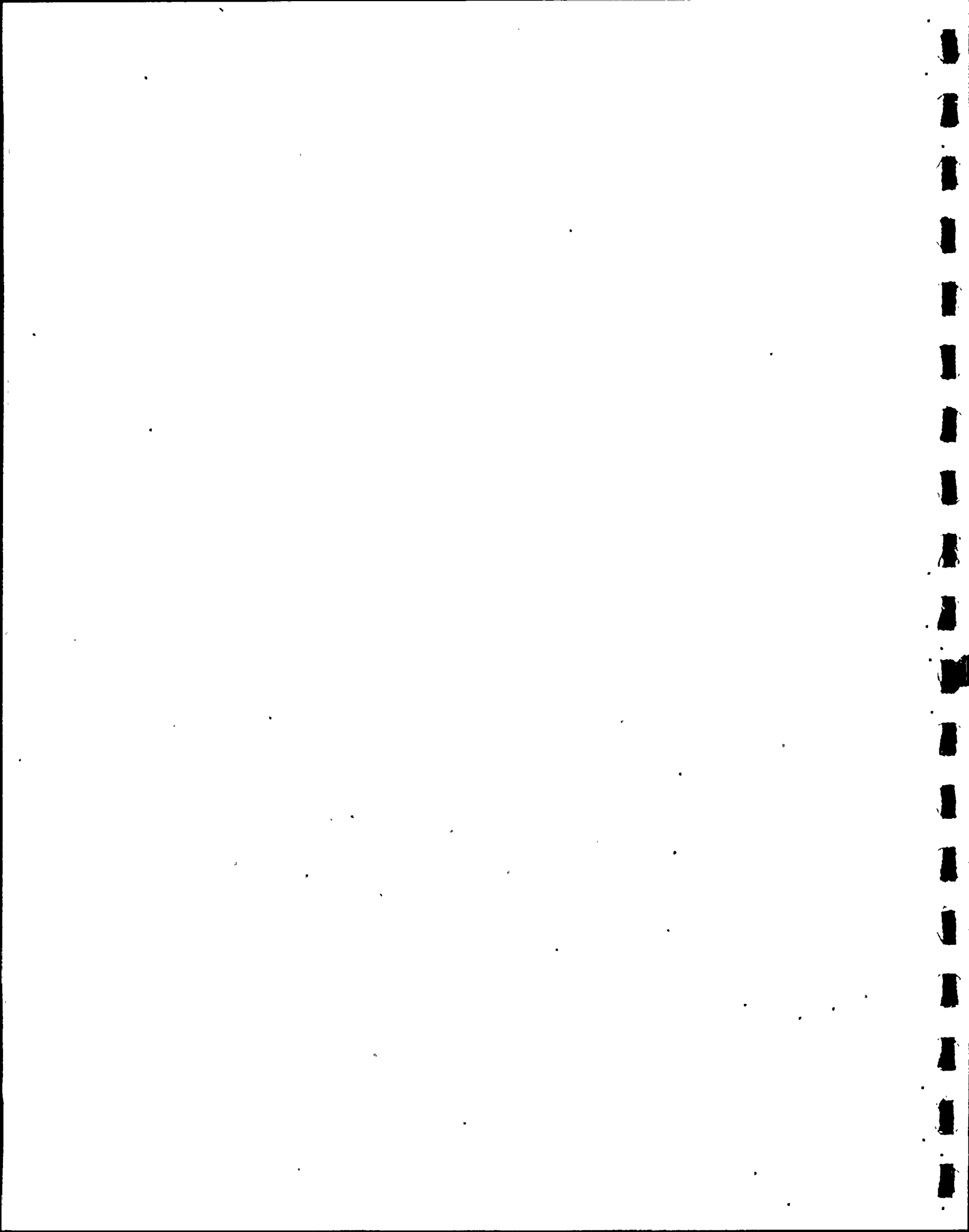
Based on the review in Task B it is concluded that the APS Management policies are designed and implemented to ensure an effective QA program.

Task C - Evaluation of QA Activities

The objective of this task was to evaluate specific elements of the APS QA program for PVNGS to determine if those elements were defined and implemented in a manner to ensure that the high standards expected of nuclear power plant construction had been met. This was accomplished by evaluating four elements of the QA program: audits, vendor evaluation, construction inspection, and deficiency reporting (10CFR21 and 10CFR50.55(e)).

In the course of this review, over 400 manuals, procedures, and records were examined and over 3,700 individual checks were made of those documents. Eight man-months of effort were spent.

Seven Findings and five Observations resulted from this review.



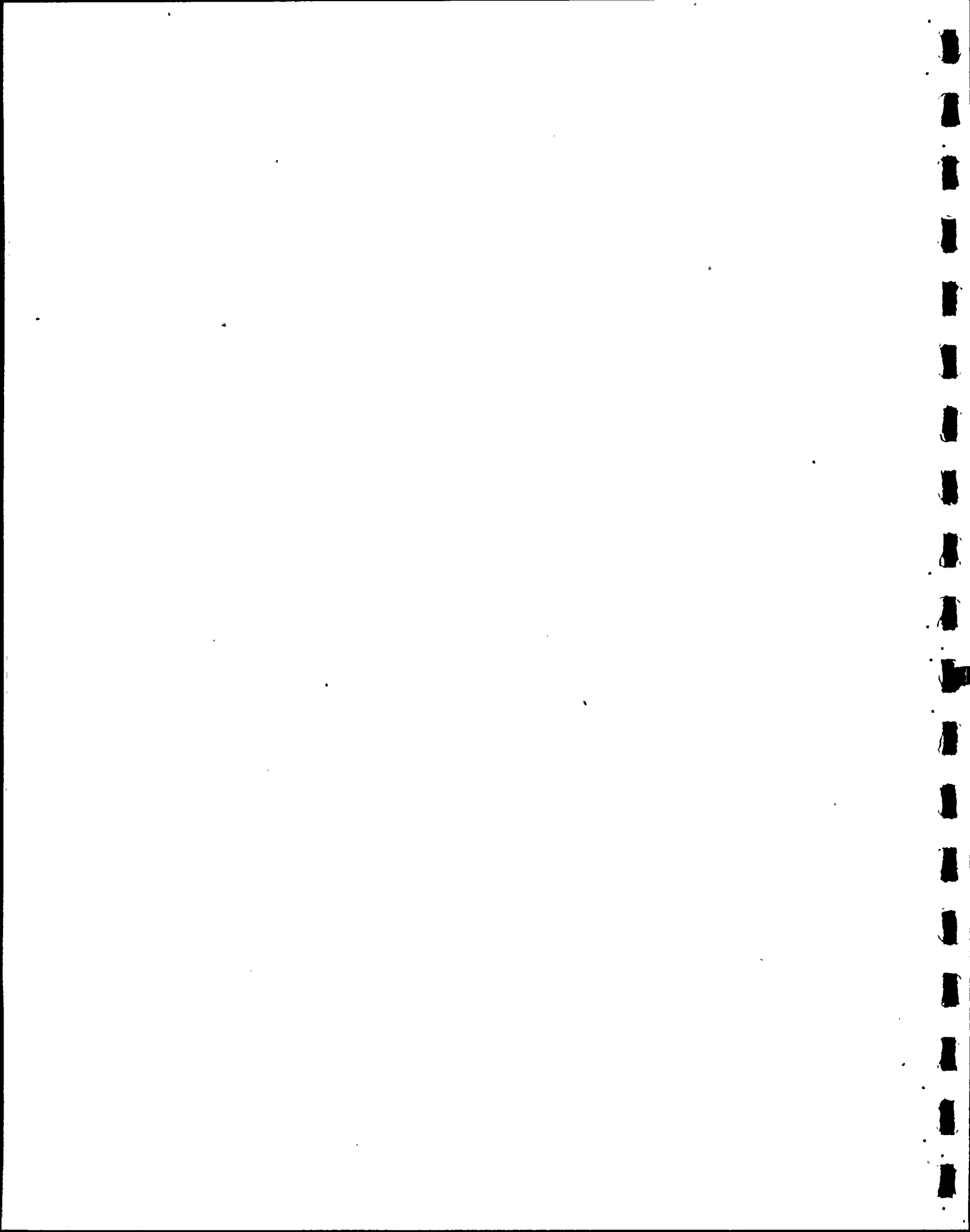
Three of the Findings related to failure of BPC to properly complete instrument installation inspection records. There were no records to provide objective evidence that certain safety-related functions were performed as required. The BPC CAPs for these conditions demonstrated that action would be taken to inspect the installations, to identify any other similar problems, and to make corrections as necessary.

Two Findings concerned failure to properly torque instrument mounting bolts. In one case a torque wrench was used outside of its useful range and in another case bolts were tightened to a level below the specified value. In the latter case, the BPC CAP showed that the questionable bolts would be checked and retorqued, as necessary, and that steps would be taken to identify and correct any similar problems. In the former case, the CAP did not provide for correcting bolts that may have been over torqued. Although the possibility of overtorquing to a level which would have safety impact is considered extremely remote, TPT recommended questionable bolts be loosened and retorqued to the proper level.

One Finding addressed the concern that, in the case of welds used for structural mounting of instrument panels and tubing supports, the BPC inspection system does not provide assurance that all welds will be properly inspected. The BPC CAP showed that the affected welds would be reinspected, any others would also be identified and reinspected, and the applicable procedure(s) revised to prevent recurrence of the problem.

The seventh Finding addressed the concern that instrument panel welds had been inspected and accepted by inspectors who were not qualified in the welding discipline. The BPC CAP showed that questionable welds would be reinspected by properly qualified inspectors, and that steps would be taken to identify and correct any similar problems.

Three Observations concerned procedural violations in the BPC inspection program. These included incomplete inspection records, inconsistencies in records, and improper documentation of rework. All were evaluated as having no substantial safety impact.



Two Observations concerned the APS audit program with regard to failure to require the Audit Team Leader to sign audit reports and failure to include recommendations for corrective action in some audit reports. These conditions were evaluated as having no substantial safety impact.

Based on the review performed in Task C, it is concluded that three of the four elements reviewed in the QA program (Audits, Vendors, Deficiency Reporting) were adequately defined and carried out in accordance with requirements. The deviations found in the audit program are considered to be minor and within the limits of what can normally be expected in any major engineering project.

Evaluation of the fourth element, the Construction Inspection Program, showed that although adequate procedures were in place, there was some weakness in implementation of the inspection program as evidenced by the 7 Findings and 3 Observations. The CAPs corrected the specific deviation and included measures to identify and correct any similar deviations. It is expected that after the CAPs are properly implemented, the weaknesses identified in the inspection program will be corrected.

Task D - Design Verification Review

The task was structured to verify that the design process adequately converted the design bases in the FSAR into design documents that were transmitted to the constructor and fabricator. Procedures used in the design process were reviewed to determine if the design process was adequate. Then, a selection of design-related documents was reviewed to verify that the procedures were indeed implemented as required. Finally, a selection of design documents was reviewed for technical adequacy.

Subtask D1 - Design Procedure Review The objective of this subtask was to review the design control procedures of C-E, BPC and APS to evaluate compliance of these procedures with the NRC-approved QA program.

Design control procedures used by APS, C-E and BPC were identified. The C-E procedures were found to be the same as those previously reviewed in TPT's seismic evaluation of the San Onofre Nuclear Generating Station Units 2 and 3, and accepted by TPT as complying with NRC requirements. Thus, there was no further review of C-E procedures. The APS and BPC procedures were then reviewed for adequacy based on commitments in Chapter 17 of the PVNGS PSAR. General guidance from 10CFR50 Appendix B and ANSI N45.2 was used to interpret and supplement the PSAR.

In this review, 31 manuals and procedures were examined. Approximately six man-months of effort were spent.

There were no Observations or Findings on this subtask. Based on the reviews performed in Subtask D1, it is concluded that APS, C-E and BPC each had design control procedures in place during the design process which satisfied NRC QA requirements for design control.

Subtask D2 - Design Procedure Implementation Review The objective of this subtask was to determine if the design control procedures in effect at C-E and BPC were properly implemented in PVNGS design documents.

Forty-seven (47) items were identified for this review including items covered in Subtask D3. For each item, design-related documents were identified and checked for compliance with design control procedures. These documents included design input, analyses, calculations, and design output. Over 800 documents were reviewed, involving over 11,000 individual checks. In the course of this review, over nine man-months of effort were spent.

Two Findings and five Observations resulted from this subtask.

One Finding concerned a C-E Purchase Order (P. O.) which was revised without first revising the base technical document(s) (as required by

procedure), nor were those documents subsequently revised. The Corrective Action Plan showed that steps would be taken to correct this problem, to prevent recurrence of the problem, and to locate and correct any similar problems.

The second Finding concerned a C-E design specification which was released without the required internal interface design review. The Corrective Action Plan showed that steps would be taken to identify and correct any similar problems and to prevent recurrence. The CAP did not explicitly state that the interface review would be performed and TPT recommended that it be done and properly documented.

The Observations addressed deviations such as improper processing of supplier deviation notices, discrepancies between calculations and calculation log, drawing change notices not incorporated within specified time limit, unnecessary referencing of ASME Code in specification, and improper processing of Purchase Order changes. All these deviations were evaluated as having no substantial safety impact.

Based on the review performed under this subtask, it was concluded that the design activities were carried out substantially in accordance with approved procedures. The Observations found were within the limits of what can normally be expected in any major engineering project; that is, occasionally procedural violations did occur, but they were not of a type that could result in substantial adverse impact on plant safety. The Findings were procedural violations which will be satisfactorily resolved when the recommended Corrective Action Plans are implemented.

Subtask D3 - Technical Review The objective of this subtask was to review the structural, mechanical, and seismic design of a selected portion of a safety system and selected portions of a structure of PVNGS for compliance with NRC-approved design bases and methodologies as given in the FSAR. Approximately 38 man-months of effort were applied to this subtask.

Table 1 lists fifteen (15) features which were reviewed in this sub-task, along with the approximately 330 documents covered in the review, and the number of Findings and Observations associated with each feature.

Each of the features for which there were Observations or Findings is discussed below. There were no Observations or Findings associated with the review of the Shutdown Cooling Heat Exchanger (Feature 2), Motor-Driven Auxiliary Feedwater Pump (Feature 4), Valves (Feature 6), Motors, Power Supplies, and Switchgear (Feature 7), Pipe Supports and Snubbers (Feature 9), Core Protection Calculator (Feature 12), Pressurizer Support and Pipe Penetrations in Containment Building (Feature 14), and Auxiliary Feedwater System - Functional Design (Feature 15).

Containment Spray Pump, Feature 1 One Finding resulted from this review, pointing out a deficiency in the design interface between C-E and BPC wherein the pump support structure stiffness or frequency was not properly specified. The review established that the range of critical frequencies of the pump-support combination was lower than and close to the pump operating speed. Adequate separation between the critical frequency and the pump operating speed to preclude resonance was not established.

The Corrective Action Plan includes validating the frequency analysis of the pump/support combined response, or performing vibration testing during pump startup. Critical frequencies will be determined and compared with pump operating speed. If adverse vibration is detected, detuning of the system will be implemented. TPT recommended that the safety injection pumps be evaluated in a similar manner. It should be noted that, regardless of the results of this review, any adverse vibration associated with these pumps would have been detected during normal startup testing and corrected prior to pump operation.

Condensate Storage Tank/Refueling Water Tank, Feature 3 Three Observations and two Findings resulted from this review. The first Observation questioned BPC's use of the seismic analysis of the Refueling Water Tank (RWT) for design of the Condensate Storage Tank (CST) without

TABLE 1
DESIGN FEATURES REVIEWED - Subtask D3

<u>Feature</u>	<u>Design Organization</u>	<u>No. of Documents Reviewed</u>	<u>Valid</u>	<u>PFRs</u>
1. Containment Spray Pump (and Motor)	C-E	8		1*
2. Shutdown Cooling Heat Exchanger	C-E	13		0
3. Condensate Storage Tank/ Refueling Water Tank	BPC	8		5*
4. Motor-Driven Safety Class Auxiliary Feedwater Pump	BPC	5		0
5. Piping	BPC	18		3
6. Valves	BPC/C-E	39		0
7. Motors, Power Supplies, & Switchgear	BPC	31		0
8. Instruments and Related Panels	BPC/C-E	46		5
9. Pipe Supports & Snubbers	BPC	19		0
10. Cable Raceways	BPC	40		2
11. Pressurizer	C-E	9		2
12. Core Protection Calculator	C-E	45		0
13. Equipment Supports for Features 1, 2, and 4 in Auxiliary Building and Main Steam Support Structure	BPC	17		1
14. Pressurizer Supports and Piping Penetrations in Containment Building	BPC	16		0
15. Auxiliary Feedwater System - Functional Design	BPC	18		0

* All valid PFRs were classified as Observations except for one Finding in Feature No. 1 and two Findings in Feature No. 3.

properly accounting for the differences in tank height and foundation embedment between the two structures. An evaluation utilizing the results of an independent seismic analysis of the CST, performed by TPT, showed that the overall seismic design of the CST is adequate. The second Observation involved an inconsistency in the specification for the allowable values of soil pressure for the tank foundation between the Design Criteria Manual and the FSAR. This did not significantly affect the design of both the RWT and the CST since the allowable values in the FSAR were met. BPC acknowledged the need to revise the allowable values in the Design Criteria Manual. The third Observation concerned an error in calculating the maximum moment for the tank foundation. Correction of the error did not result in exceeding the allowable stresses in the reinforcing steel provided in either the RWT or the CST foundation slab.

The first Finding concerned the design of both the RWT and the CST walls. Deviations noted included (a) lack of consideration for foundation restraint in calculating thermal stresses, (b) with respect to the design of hoop reinforcing steel, failure to include hoop bending moments due to thermal effects, (c) inadequate consideration of three directions of seismic motion in calculating wall reinforcing steel, and (d) lack of justification for not providing inclined reinforcing steel in the CST, whereas such reinforcing steel was provided in the RWT design. Calculations performed during the review, which accounted for the structural capacity of the wall liner and for the CST, use of the results of the TPT independent seismic analysis, showed that these deviations did not result in violating the design requirements, except for the outer vertical reinforcing steel for the RWT wall. Using a simplified, but conservative design approach (e.g., not allowing for stress redistribution), the outer vertical reinforcing steel provided was found to be over-stressed. A more rigorous analysis, accounting for stress redistribution which is permissible would be expected to result in stresses meeting allowable values. BPC has not yet done this kind of calculation.

The Corrective Action Plan utilizes the formal Deficiency Evaluation Report (DER) process with the following corrective actions: (1) evaluation of deviation for reportability per 10CFR50:55(e), (2) review of detail draw-

ings for conformance to design criteria, (3) analysis of as-built condition for conformance to design criteria, and (4) initiating a physical design correction, if required. It is anticipated that the CAP will resolve the Finding without effecting a design change for both tanks.

A second Finding resulted from the review of the design of the tank roof stainless steel liner. The largest panel analyzed by BPC was not the largest one shown on the design drawings, and furthermore, an allowable stress of 0.9 of yield strength was specified for normal loading conditions. The results of simplified and conservative analysis (e.g., not accounting for large-deflection and membrane effects) showed that the allowable stress in the RWT roof liner could be exceeded, for the design pressure of 0.5 psig.

The Corrective Action Plan includes (1) clarification of the design pressure for the RWT during normal and accident conditions and (2) re-analysis of the correct liner panel configuration using boundary conditions appropriate for the analytical approach to be utilized. It is anticipated that the re-analysis will resolve the Finding if plate membrane effects are considered. A physical design correction is not a likely outcome of the CAP.

Piping, Feature 5 Three Observations resulted from this review. The first Observation concerned the use of a seismic response spectra curve in the piping analysis which is lower than that given in the FSAR; the second Observation addressed inconsistencies between the loading combinations listed in the FSAR and those listed in the design specification; and the third Observation concerned the failure to demonstrate in the pipe penetration analysis that upset allowable values had been met. All of these Observations were determined to have no substantial adverse impact on the adequacy of the design since they do not materially change the stresses in the piping and pipe penetrations, and FSAR requirements are met.

Instruments and Related Panels, Feature 8 Five Observations resulted from this review. Two of these involved a lack of consideration in the environmental qualification requirements for the effects of dust, and a

third addressed the accuracy of the auxiliary feedwater pressure measurement with respect to FSAR limitations. The fourth Observation concerns the thermal aging requirements in the Environmental/Seismic Test Plan as it applies to Handswitch HS-6. The fifth Observation points out an inconsistency between the seismic test requirements issued by BPC and C-E with reference to qualification of Handswitch HS-31E. However, equipment qualification is currently in progress, and the noted deviations are being addressed accordingly, and would have been addressed even if this review had not taken place. Thus, none of the deviations creates a substantial safety hazard.

Cable Raceways, Feature 10 Two Observations resulted from this review. The first Observation addressed the lack of detailed calculations for support connections prior to their installation. The second Observation resulted from unconservatively ignoring the effect of moments caused by cantilever loads due to trays below the brace. In both instances, the deviations did not materially impact the design adequacy of the tray supports.

Pressurizer, Feature 11 Two Observations resulted from this review. The first observation pointed out that C-E had not performed a support skirt buckling analysis as required by the ASME Code, and the second observation noted an incorrect value for nozzle bending moment used in the stress analysis. These calculational deficiencies, when corrected, did not affect the design of the pressurizer support skirt and nozzle.

Equipment Supports, for Feature 1, 2, and 4 Auxiliary Building and Main Steam Support Structure, Feature 13 The one Observation resulting from this review involved incorrect and unconservative assumptions in loading employed in the design analysis of the top plate of the support for the containment spray pump. A reanalysis using correct loading conditions indicated acceptable stresses.

In summary, the technical review of 15 selected features of PVNGS Units 1, 2, and 3, involving review of approximately 330 technical documents, resulted in 19 valid PFRs, 16 of which were classified as Observations and 3 as Findings.

Thirteen Observations and 2 Findings resulted from the review of approximately 220 technical documents on 11 design features. Technical review of six design features did not result in filing of any PFR. Three Observations and two Findings pertained to the review of the Condensate Storage Tank design. The deviations noted were associated with BPC's use of a common design analysis for both the Refueling Water Tank and the Condensate Storage tank, wherein significant differences between the two structures were not properly recognized. Five other Observations resulted from the review of instrumentation; deviations were attributed to incomplete status of the environmental/seismic qualification of equipment reviewed which would have been addressed during the course of the equipment qualification effort. The remaining Observations were attributed to inadequacies in documentation and errors in calculational logic. It should be noted that the number of deviations uncovered is not abnormal considering the magnification used in the technical review. The design and construction experience of BPC, when coupled with the large degree of conservatism found in essentially every part of the design, resulted in these deviations having no significant impact on the overall design of the features reviewed in BPC's scope of responsibility.

Three Observations and one Finding resulted from the review of C-E's design, involving approximately 110 technical documents on 6 design features. Technical review of three design features did not result in any PFR. The one Finding identified a potential vibration problem with the containment spray pump and support assembly. A CAP has been proposed to resolve the problem; in any case, if a vibration problem occurs, this would have been detected during pump startup testing and would have been corrected prior to pump operation. The deviations identified in these PFRs were judged to not significantly impact the design adequacy of C-E's NSS-supplied components covered in these reviews.

Based on the review performed on this subtask D3, the structural, mechanical, and seismic design of selected portions of two major safety systems and structures of the FVNGS Units 1, 2, and 3 complies with the NRC-approved design bases and methodologies as given in the FSAR. The Corrective Action Plans proposed by APS to resolve the Findings are not expected to result in physical design corrections of the installed hardware.

Overall Conclusions - Task D Task D evaluated the design control system of the FVNGS, the implementation of the pertinent procedures and controls, and the adequacy of the design of the selected safety-related structures, systems, and components which were designed utilizing these procedures and controls.

The review showed that adequate design control procedures were in place at the major contractors and that the design activities were carried out substantially in accordance with these procedures. The procedural deviations detected were within the limits of what can normally be expected in any major engineering project and were rather isolated events.

The procedures were effective in generating an adequate design as was demonstrated through detailed technical review of selected portions of two major safety systems and structures. Their design in general complied with the NRC's approved design basis and methodologies given in the FSAR. The deviations detected are expected to be accommodated within the margin of the conservatism in the design, or were such that they would have been detected during start-up testing. Thus, the final conclusions are based on the expectation that the CAPs will demonstrate that the related Findings will not result in hardware changes.

In summary, based on the review of design-related procedures in subtask D1, the review of their implementation performed under subtask D2, and the technical review performed under Subtask D3 the design of FVNGS Units 1, 2 and 3 is judged to be adequate.

Task E - Construction Verification Review

This task was designed to verify the compliance of construction-related QA procedures and controls with NRC-approved QA requirements, to evaluate the implementation of these procedures and controls, and to determine that construction of selected safety-related systems and components, utilizing these procedures and controls, was in accordance with design documents.

Subtask E1 - Review of Field Design Change Control The objective of this subtask was to evaluate the APS and BPC procedures for control of field design changes and to evaluate implementation of those procedures by examination of design change documents. Procedures relevant to field design change control were identified and evaluated for compliance with commitments in Chapter 17 of the PSAR. In addition, 10CFR50 Appendix B and ANSI N45.2 were used to provide general guidance to interpret and supplement the PSAR.

Nine procedures were reviewed and were found to satisfactorily meet all relevant PSAR QA program requirements.

Implementation of these procedures was evaluated by examining a total of 138 change control documents for procedural compliance. The examination of these documents included over 2,100 individual procedural checks. Over one man-month of effort was applied.

There were no Observations or Findings under this subtask.

Based on the reviews performed, it was concluded that the procedures to control field design changes were adequate and that those procedures have been complied with in a satisfactory manner.

Subtask E2 - As-Built Drawing Control The objective of this subtask was to evaluate the APS and BPC procedures for as-built drawing control and to evaluate implementation of those procedures by examination of as-built records.

Procedures relevant to the as-built drawing control system were identified and evaluated for compliance with commitments in Chapter 17 of the PSAR. In addition, 10CFR50 Appendix B and ANSI N45.2 were used to provide general guidance to interpret and supplement the PSAR.

Five procedures were reviewed and were found to satisfactorily meet all relevant PSAR QA program requirements.

Implementation of these procedures was evaluated by examining a total of 228 documents. The examination of these documents included over 550 individual procedural checks. Two man-months of effort was applied.

One Observation resulted from this review. It related to a BPC procedural violation in failing to list certain documents in the As-Built Log. It was evaluated as having no substantial safety impact.

Based on the reviews performed under this subtask, it was concluded that the procedures used to define as-built drawing control were in compliance with PSAR commitments, and that the procedure implementation was adequate.

Subtask E3. Physical Verification The objective of this subtask was to determine if the physical installation of selected portions of safety systems and structures of PVNGS conforms to the requirements of design drawings and specifications. Approximately 12 man-months of effort were applied to this subtask.

Certain segments of two safety-related systems, the Auxiliary Feedwater System and the Safety Injection and Shutdown Cooling System, were selected for a physical on-site verification of actual construction and installation of hardware, components, electrical equipment and instruments, to determine if plant equipment was installed properly, if dimensions and physical locations were correct, and if all identification markings were correct.

The majority of the physical verification (walkdown) program was performed in PVNGS Unit 1, with lesser emphasis on Units 2 and 3. The Unit 2 walkdown was approximately 40% of that performed in Unit 1, and Unit 3 was about 15%. The mechanically-oriented walkdown involved approximately 900 linear feet of piping in Unit 1, including 53 individual valves, and 50 pipe supports. Also included were two major pumps, a shutdown heat exchanger, several cable trays and their associated support assemblies, plus the reactor coolant loop pressurizer supports.

The Unit 1 electrical walkdown involved five motor control centers and switchgear panels, two major drive motors for the pumps, six instrument sensing elements, 19 instrument indicators and transmitters, terminations for five cable runs, and five motor actuators for large valves.

Eleven Observations and three Findings resulted from this walkdown. The Observations ranged from missing or incorrect identification tags on instruments and equipment, to apparently inconsistent or incorrect piping spool lengths based on the installation drawings. Some equipment tags indicated data different from the call-out on drawings.

Two of the three Findings involved tagging of equipment. The first Finding identified a safety-class drain valve which had no code or manufacturer's tag affixed. Therefore, traceability for this valve was in question. The second Finding noted that a significant number of valves and equipment items included in the walkdown were affixed with tags containing information not consistent with data sheets or other source documents which, in some cases, indicate the possibility that the installed item could be in error relative to specifications in the source document. Taken individually these deviations might have been classified as Observations. However, the repetitive nature of deviations considering the size of the sample, resulted in this being classified as a Finding. The third Finding involved an over-stress condition either on the weld or Unistrut member which was uncovered as a result of missing welds on the physical installation of a cable tray support connection detail.

The Corrective Action Plan for the above Findings includes: (1) evaluation of the extent of the incorrect or missing tag condition by additional field inspections and implementing a program to correct both the cause and the specific deviations noted, and (2) re-analysis of the connection detail and all types of tray support which utilized the specific connection detail and implementing a physical design correction if found necessary.

Based on the physical on-site verification performed under this subtask E3, the physical installation of selected portions of safety-related systems and structures of PVNGS Units 1, 2 and 3 is judged to conform to the requirements of design drawings and specifications. The Corrective Action Plans proposed by APS should satisfactorily resolve the deviations found; it is expected that the implementation of the corrective actions will not result in physical changes in installed hardware. The expectation is that the installed hardware will be confirmed as correct and that the inconsistencies in equipment identification will generally be traced to errors in the non-essential portions of the equipment identification or errors in the source documents. The technical issue associated with the cable tray support is expected to be accommodated within the normal conservatism in design by BPC, when more rigorous analysis is performed.

Overall Conclusions - Task E In summary, based on the comprehensive review performed under subtasks E1 and E2, which resulted in no Findings being generated, the QA procedures on field change and as-built drawing controls and their implementation are judged to be adequate. Based on the physical on-site verification performed under subtask E3, the physical installation of the selected portions of safety-related systems and structures is judged to conform to the requirements of design drawings and specifications.

OVERALL SUMMARY AND CONCLUSIONS

Summary of Observations and Findings

Potential Finding Reports were the mechanism used in this program to document and resolve questions raised during the review process. This

mechanism was highly formalized to assure that no pressure could sway the reviewer's technical judgment, thus allowing any potential comment or concern to be raised. Reviews by task leaders were made to insure that the questions raised were accurately communicated and that pertinent information had not been overlooked by the reviewer. Still, a number of PFRs were initiated because of the lack of information or adequate understanding of the process or approach used by APS, BPC or C-E in the area of concern. Thus, 31 of the documented 89 PFRs were satisfactorily answered during the process and were declared invalid.

Of the valid PFRs, 41 were Observations and 17 were Findings. Ten of these Findings address deviations that relate to not giving proper instructions or not performing the right design, construction or review. The remaining 7 address deviations related to lack of properly documenting work performed.

Questions regarding the adequacy of the design, based on the material reviewed, were raised in four Findings. Refined analyses and/or tests are expected to show in all cases that the designs are adequate.

The lack of pertinent procedures was the reason for 3 Findings. Corrective actions have shown that these deviations were either invalid or have not resulted in a safety hazard in the past, and were corrected for the future.

Two Findings addressed specific isolated items where procedures were not followed or no objective evidence existed that they were followed. One was a top level document review, the other a missing code valve tag.

One Finding related to a low level of staffing in the QA department. Appropriate corrective action is being recommended and taken.

Six Findings resulted from lack of objective evidence in the documentation that selected instruments had been installed properly. Corrective action includes a recheck for proper installation, confirmation

that the installation indeed had been proper and that the deviations did not affect generally a whole range of instruments.

One Finding addressed multiple discrepancies between tags and documents on installed equipment. The proposed corrective action is adequate to correct the problem and attack the root cause.

Forty-one deviations were classified as Observations, which included apparent salary inequities between QA and other departments, procedural violations and inconsistencies in records, failure to follow ANSI N45.2.12 requirements for approval of audit reports, failure to enforce corrective action on vendors, failure to incorporate drawing changes in a timely manner, inconsistencies between internal documents, and failure to follow document approval and As-Built log updating procedures. They also include inadequacies in design documentation, errors in calculational logic, incomplete items due to the on-going environmental/seismic qualification of equipment, and missing or incorrect identification tags on instruments and equipment. None of these deviations was judged to potentially cause a substantial safety hazard.

To keep things in perspective, the number of deviations that are discovered in any examination depends on the "magnification" used. If insufficient magnification is used, no deviations will be discovered. If a high magnification is used, deviations will always be found. TPT has used a high magnification in the review of Palo Verde Units 1, 2 and 3, and deviations have been found.

Details of each Observation and Finding are discussed in the appropriate section of this report, together with its implication on the task conclusion.

Summary of Corrective Action Plans

A Corrective Action Plan (CAP) was prepared by APS for each Finding issued in this program. The purpose of these plans was to describe the

approach planned to correct deviations identified in the Findings. These Plans were reviewed to assure that the deviations were properly understood, that the Plan when implemented would remove any concern identified in the Finding, and that possible generically similar items were addressed.

All Plans demonstrated that the deviations in the Findings were indeed properly understood and when implemented, the planned action, taken in concert with the rest of the Program and together with TPT's comments, would remove the concern that the Findings may have raised.

In summary, all the Findings are either satisfactorily closed out or will be upon completion of the Corrective Action Plan.

Conclusions

This program for an independent Quality Assurance Evaluation of the Palo Verde Nuclear Generating Station covered a broad range of activities of APS and its major contractors. Tasks A and B evaluated the organizational elements charged with directing and implementing the quality program at the PVNGS, i.e., the Nuclear Projects Management Organization and its dedication to quality. Task C and portions of Tasks D and E looked into the QA organization, the QA program, and the effectiveness of the QA measures in design and construction. The remainder of Tasks D and E covered a technical evaluation of selected portions of safety-related systems, structures, and components of the plant and addressed the same in the as-built plant, through physical verification.

The safety-related design was evaluated by establishing that adequate controls and procedures were in place to govern the conversion of design bases into design documents used for fabrication and construction, by confirming that these procedures were followed during the design, and that an adequate technical design resulted from their use.

Hence, quality assurance aspects of the PVNGS were evaluated from various perspectives to provide a basis for the following conclusions in the five major areas of review:

1. The combination of the organization structure, network of project procedures and management's support for and consideration of quality in the project effort has had a very positive effect on assuring quality.
2. APS management policies toward Quality Assurance are adequate. These policies on QA, together with management's interest and involvement in assuring they are carried out, had a strong positive influence on the PVNGS QA program for design and construction.
3. Elements of the APS QA program in the areas of audits, inspection, vendor evaluation and deficiency reporting were properly defined and, in general, properly implemented.
4. The major contractors, BPC and C-E, each had adequate design control procedures during the design process. These procedures were implemented properly and have been effective in generating an adequate design for the selected portions of two major safety systems. Therefore, the design of PVNGS is judged to be adequate.
5. The QA procedures on field change and as-built drawing controls and their implementation are judged to be adequate. The physical installation of the selected portions of safety-related systems and structures is judged to conform to the requirements of design drawings and specifications.

Overall, the QA program at PVNGS appears to be effective and successful. No reason has been found to prohibit issuance of a full power license.

GA-C16924

**INDEPENDENT QUALITY ASSURANCE
EVALUATION OF PALO VERDE NUCLEAR
GENERATING STATION
UNITS 1, 2, AND 3**

Docket #50-528/529/530
Control #8211290135
Date 11/19/82 of Document:
REGULATORY DOCKET FILE

**VOLUME 3
POTENTIAL FINDINGS REPORTS
BOOK 2
REPORTS PFR 051 TO 089
and
CORRECTIVE ACTION PLANS**

PREPARED FOR

ARIZONA



PUBLIC SERVICE COMPANY

P.O. BOX 21666 - PHOENIX, ARIZONA 85036

**GENERAL ATOMIC PROJECT 2426
OCTOBER 1982**



**TORREY
PINES
TECHNOLOGY**

A DIVISION OF GENERAL ATOMIC COMPANY

POTENTIAL FINDING REPORT
PVNGS QUALITY ASSURANCE VERIFICATION

PFR NO. 2426-PFR -051 REVISION ~~Issue~~-B

REPARATION BY GA INITIATOR
AFFECTED ITEMS:

Containment penetration Number U76

REQUIREMENT REFERENCE DOCUMENTS:

1. ASME Boiler and Pressure Vessel Code, Div. 1, Sec. III, Subsection NC, 1974 and Code Case 1606.

BASIC REQUIREMENT:

1. The stress allowables specified in Reference 1 have to be met for upset condition loading combination for the penetration.

DESCRIPTION OF POTENTIAL FINDING:

(See page 1A)

PREPARED BY: M. Jersha DATE: 1/30/82

USE THE SPACE BELOW TO DOCUMENT ANY RE-REVIEW ACTION TAKEN BY INITIATOR ON THIS PFR.

SIGNATURE: _____ DATE: _____

POTENTIAL FINDING REPORT (CONT'D)

PFR NO. 2426-PFR-051, pg. 2

REVISION B

PREPARED BY GA INITIATOR/TASK LEADER

PAGE NO. 1A

1. There is no indication that penetration upset allowable stresses were met. The upset piping loads exceed those given in the design specifications for the penetration (Attachment 1). The upset loads have been compared with the faulted allowable loads (Attachment 2) and stresses (Attachment 3) which is incorrect since faulted loads do not govern the penetration design. As shown in Attachment 3 for the key penetration, the normal and thermal loads govern the design. Thus the piping upset loads should have been compared with the normal and thermal allowable loads and stresses.

DESIGN. 4. 11

BYAC.

B. REVIEW BY GA TASK LEADER

PFR NO. 2426-PFR

- 051

REVISION

SVB

☐ REQUEST RE-REVIEW

BY:

DATE:

REASONS:

☒ AGREE PF IS VALID/~~INVALID~~

BY:

DATE:

☐ DISAGREE WITH INITIATOR

BY:

DATE:

REASONS:

Rev. B retains Item 1 of Issue A as still valid. Item 2 has been invalidated based on additional information provided by BPC in response to Issue A.

C., D. SEE ATTACHED SECTIONS C AND D (PAGE 3)

E. RECOMMENDATION BY FINDINGS REVIEW COMMITTEE

DEFINITION:

☒ ADEQUATE

☐ INADEQUATE

VALIDITY:

☒ VALID

☐ INVALID

CLASSIFICATION:

☒ OBSERVATION

☐ FINDING

JUSTIFICATION

CLASSIFICATION CRITERION NO. RESULTING IN "FINDING" _____

COMMENT ON "OBSERVATION" OR "FINDING" CLASSIFICATION:

Calculation error but design is OK

BY:

DATE:

BY:

DATE:

F. GA PROJECT MANAGER

☒ ACCEPT

☐ REJECT

BY:

DATE:

CALCULATION SHEET

PRR-051 Pg. 4
 P208.
 REC'D. NO. AF-50221
 L400134-23

DATE 8/19/82

CHECKED J L41 DATE 8/20/82

JOB NO. 10407-002

SHEET 8B OF 55 SHEETS

SIGNATURE: P. Stibbe
 APPROV. APPROPRIATE
 SUBJECT: AUX. FEEDWATER SVST.

ATTACHMENT 1

2428 - PFR-051, Rev. B

CONTINUED ON SHEET 8C

D.P. 390
 COMP. RUN * NL-793 8/19/82
 * NL-899 8/09/82

PENETRATION No. 76 LOAD SUMMARY
 REF- MELCH. PENETRATION ASSEMBLIES FOR ANPD (SPEC. #13-MM-500)

	RESULTANT FR (LBS)	RESULTANT MR. (FT.-LBS)	ALLOWABLE FR (LBS)	ALLOWABLE MR. (FT.-LBS)	REMARKS
THERMAL	97.	929.	1990.	4396	O.K.
WEIGHT	289.	594.	850.	1884	O.K.
SSE	2045.	17,609.	13640	30140	O.K.
SAM (OBE)	621.	4604.	6820.	15,070.	O.K.
(UPSET) WT+OBE	1356.	10,066.	1020	2261.	SEE SHEETS 8C-8E
(ENERG) WT+OBE	1356.	10,066.	1530.	3394.	SEE SHEETS 8C-8E
(FAULTED) WT+SSE	2,273.	18,126	93000.	108333.	O.K.

CALCULATION SHEET

PFR-051

PROB

LAO 113-73

Pg. 5

CALC. NO. AF-502A

DATE 8/17/82

CHECKED

LA

DATE

8-17-82

ASIP (PUNGS)

JOB NO.

10407-0029

EVALUATION OF CONTAINMENT PENETRATION SHEET 8E OF 55 SHEETS

ATTACHMENT 2

CONT ON SHEET 8F

PFR-051, Rev. B

PENETRATION 75 76 _____

RECONCILLATION FOR NU CASE. (BY USING FAULTED CONDITION)

THE ACTUAL CALCULATED PIPE LOADING FOR THE UPSET CONDITION (REFERENCE 1) EXCEEDS THE SPECIFIED UPSET CONDITION LOADING (REFERENCE 3)

1) THE LOADING COMBINATIONS FOR THE UPSET AND FAULTED CONDITIONS ARE TABULATED BELOW

LOADING CONDITION

LOADING COMBINATION

UPSET

$PO + DW + OBE + Nu$

FAULTED

$PO + DW + SSE + N_f + N_n$

WHERE $N_f > Nu > N_n$, $SSE = 2OBE$

2) THE MAXIMUM FAULTED CONDITION STRESS INTENSITY REPORTED BY REFERENCE 2 ON PAGE 4 IS 17.765 * PSI AND IS $<$ THE UPSET CONDITION ALLOWABLE OF $1.2 S_R = 18,672$ PSI. THEREFORE BY APPLYING $(F_R)_{FAULTED} = 93,000$ LBS AND $(M_R)_{FAULTED} = 108,333$ FT-LBS. (REFERENCE 3), THE MAXIMUM STRESS INTENSITY WILL NOT EXCEED THE UPSET CONDITION ALLOWABLE.

3) ACTUAL UPSET VALUES	(SPECIFIED) FAULTED
(REFERENCE 1)	(REFERENCE 3)
$F_R = 1,660$ LBS	$< 93,000$ LBS
$M_R = 10,336$ FT-LBS	$< 108,333$ FT-LBS

9) AS IS EVIDENT FROM ITEMS 1, 2 AND 3 ABOVE THE ACTUAL CALCULATED UPSET LOADINGS FROM REFERENCE 1 ARE ACCEPTABLE AND WILL NOT RESULT IN A UPSET CONDITION STRESS INTENSITY $> 1.2 S_R$

* THE VALUE 17.765 PSI IS TAKEN FROM THE "KEY" PENETRATION NO. IPB 12 BECAUSE THEY HAVE THE HIGHEST LOAD IN THEIR SIZE CLASS. THIS PERMITS A CONSERVATIVE PREDICTION OF THE STRESSES IN PENETRATIONS OF SIMILAR CONFIGURATION. (REFERENCE 2, PAGE 3)

2426- PFR-051 Rev. B ^{pg. 6}

ATTACHMENT 3

TABLE 1

MARGINS OF SAFETY - PENETRATIONS 11 & 12

Loading Condition Category	Loading Combination	Component	Critical Element No.	Maximum Stress Intensity PSI	Allowable Stress PSI	Margin of Safety Allowable S.I. -1
Design	PD	Flued Head	24	5454	$S_h = 17,500$	2.21
		Pipe	185	7984	$S_h = 17,500$	1.19
Normal	PO + DW + N_n	Flued Head	193	5177	$S_h = 17,500$	2.38
		Pipe	185	7155	$S_h = 17,500$	1.45
Upset	PO + DW + OBE + N_u	Flued Head	193	5300	$1.2 S_h = 21,000$	2.96
		Pipe	185	7248	$1.2 S_h = 21,000$	1.90
Emergency	PO + DW + OBE + N_e	Flued Head	193	5861	$1.8 S_h = 31,500$	4.37
		Pipe	185	7671	$1.8 S_h = 31,500$	3.11
Normal + Thermal	(PO+DW+ N_n) (S_E + Eq)	Flued Head	24	34212	$S_h + S_A = 43,750$	.279
		Pipe	17	27352	$S_h + S_A = 43,750$	0.60
Faulted	PO+DW+SSE+ + N_f + N_n	Flued Head	28-174	17765	$1.8 S_h = 31,500$	0.77

PD = Design Pressure psi

PO = Operating Pressure psi

DW = Dead Weight lbs.

OBE = Operating Basis Earthquake lbs.

N_n = Nozzle Load Under Normal Condition lbs.

N_e = Nozzle Load Under Emergency Condition lbs.

N_u = Nozzle Load Under Upset Condition lbs.

S_E = Thermal Expansion Load lbs.

Eq = Earthquake Anchor Displacement Load lbs.

N_f = Nozzle Load Under Faulted Condition lbs.

FROM:

LOCATION:

DATE:

TO:

Attachment to 2426-PFR-051 Rev. B

LOCATION:

DATE:

PFR-051

Pg. 7

TELEPHONE COMMUNICATION RECORD

(PLEASE READ LETTER LEGIBLY IN BLACK OR RED INK)

CALL INITIATED BY: M. KRISHNAN

AT GAC



OTHER:

CALL RECEIVED BY: DOUG FREELAND

AT GAC



OTHER:

BECHTEL

OTHER PARTICIPANTS:

RON JOHNSON

PROGRAM NAME

PROGRAM NUMBER

DATE: 9/30/82 TIME: 8:30 AM

ANPP

2426

SUBJECT: RESPONSE TO PFR-051, item 1.

SUMMARY: DOUG REFERRED THE PROBLEM TO RON. WE DISCUSSED

IN LENGTH ABOUT THE INCORRECT APPROACH OF COMPARING

THE EXCEEDED UPSET LOADS WITH THE FAULTED STRESS

VALUES. RON AGREED TO MY PROPOSAL THAT A SIMPLIFIED ANALYSIS

SHOULD BE PERFORMED (BY BECHTEL), SIMILAR TO THE ONE

PERFORMED FOR "NORMAL + THERMAL" CONDITION FOR PENETRATION 76.

THE RESULTS OF THE ANALYSIS WOULD BE COMPARED

WITH THE UPSET STRESS ALLOWABLES SPECIFIED IN THE

ASME CODE (1-2 S_H PSI). UPON COMPLETION BECHTEL WOULD SEND

THE CALCULATIONS TO GENERAL ATOMIC.

ACTION ITEMS:

Date
RequiredPerson
Responsible

DISTRIBUTION:

File No.:

FROM: Attachment to 2426-PFR-051 LOCATION: _____ DATE: _____
TO: 10/1/82 LOCATION: _____ DATE: _____

PFR-051
Pg. 8



TELEPHONE COMMUNICATION RECORD

(PLEASE HAND LETTER LEGIBLY IN BLACK OR RED INK)

CALL INITIATED BY: M. KRISHNAN AT GAC ☒ OTHER: _____

CALL RECEIVED BY: Doug Freeland AT GAC ☐ OTHER: BECHTEL

OTHER PARTICIPANTS: _____

DATE: 9/28/82 TIME: 11:30 AM PROGRAM NAME: ANPP PROGRAM NUMBER: 2426

SUBJECT: RESPONSE TO PFR-051, Item 2

SUMMARY: DOUG SAYS THAT ANALYSIS ON PENETRATION #76

FOR FAULTED CONDITION IS NOT REQUIRED SINCE THE ANALYSIS FOR
PENETRATION #11 BOUNDS THE LOADS ON PENETRATION #76. ANY ANALYSIS
FOR PENETRATION #76 WAS DONE FOR VERIFICATION PURPOSES ONLY, LIKE
THE ~~IS~~ "NORMAL + THERMAL" LOADING CONDITION ANALYSIS.

I CONCURRED WITH THE OPINION THAT FAULTED CONDITION ANALYSIS
ON THE PIPING PORTION OF THE PENETRATION DO NOT HAVE TO BE CHECKED
SINCE THE PIPING ANALYSIS SHOWED IT TO BE ADEQUATE (CALC. 22:533A).
THE FLUED-HEAD PORTION HAS BEEN SHOWN TO BE LESS CRITICAL
THAN THE PIPING PORTION AND HENCE WOULD AUTOMATICALLY SATISFY
THE CODE REQUIREMENT IF THE PIPING PORTION IS SHOWN TO BE
ADEQUATE. HENCE, FAULTED CONDITION ANALYSIS ON PENETRATION #76 IS
NOT REQUIRED.

ACTION ITEMS:	Date	Person
	Required	Responsible

DISTRIBUTION: _____

File No.: _____

PFR-051
Pg. 9
TO:
Bechtel Power Corporation

Engineers - Constructors

12400 East Imperial Highway

Norwalk, California 90650

MAIL ADDRESS

P.O. BOX 60860 - TERMINAL ANNEX, LOS ANGELES, CALIFORNIA 90060

TELEPHONE: (213) 864-6011



RECEIVED

W. A. SIMON

B/TPT-E-41884

MOC 219841

October 4, 1982

OCT 6 1982

Torrey Pines Technology
Post Office Box 81608
San Diego, CA 92138

COPIES.....

ROUTE.....

FILE.....

Attention: Mr. W. A. Simon, Project Manager

Subject: Arizona Nuclear Power Project
Additional Calculations - PFR-051
File: D.46.02

Reference: TPT:127:WAS:82 dated September 15, 1982

Dear Mr. Simon:

The attached Calculation supplements Bechtel Power Corporation's response dated September 23, 1982 to PFR-2426-051. This supplement was generated as requested by Mr. M. Krishnan of Torrey Pines Technology.

Very truly yours,

BECHTEL POWER CORPORATION

J. E. Mahlmeister
Project Engineer - TPT Evaluation
Los Angeles Power Division

JEM/mh

Enclosure: Calculation - PFR -051 (4 sheets)

cc: E. E. Van Brunt, Jr. w/encl.

NOV 19 1982

CALCULATION SHEET

PFR-051, pg. 10

LAO 0513 8-73

CALC. NO. _____

SIGNATURE R.M. Johnson

DATE 9-30-82

CHECKED ckw

DATE 10/1/82

PROJECT ANPP (PVNGS)

JOB NO. 10407

SUBJECT PFR 2426-PFR-051

SHEET 1

OF 4

SHEETS

PENETRATION 76

ACTUAL UPSET LOADING

INSIDE CONTAINMENT

FR = 1660

MR = 62904 in-lb

OUTSIDE

FR = 1356

MR = 120792 " "

Σ

= 3016

= 183696 in-lb

Component LOADS

AXIAL FORCE = $F_A = .577 FR = 1740$ lb

LATERAL SHEAR = $F_V = .817 FR = 2464$ lb

TORSIONAL MOMENT = $M_T = .577 MR = 105993$ in-lb

BENDING MOMENT = $M_V = .817 MR = 150080$ in-lb

Pipe PROPERTIES

$J = \frac{\pi}{2} (3.312^4 - 2.75^4) = 99.17$ in⁴

$A = \frac{\pi}{4} (6.625^2 - 5.501^2) = 10.70$ in²



CALCULATION SHEET

PFR -051, pg. 11

LAO 0313 8-73

CALC. NO. 101182SIGNATURE R.M. Johnson DATE 9-30-82CHECKED ckw DATE 10/1/82PROJECT ANPP (PVNGS)JOB NO. 10407SUBJECT PFR 2426-PFR-051SHEET 2 OF 4 SHEETSPIPE STRESS

$$1) \sigma_y = \frac{F_A}{A} + \frac{PR}{2t} + \frac{M_v R}{J}$$

$$= \frac{1740}{10.70} + \frac{(1630)(3.3125)}{2(1.562)} + \frac{(150080)(3.3125)}{99.17}$$

$$= 9979 \text{ psi}$$

$$\sigma_y \text{ CORRECTED VALUE} = (9979)(1.0394) = 10373 \text{ psi (-)}$$

$$2) \sigma_x = \text{PRESSURE STRESS} = 1630 \text{ psi}$$

$$\sigma_x \text{ CORRECTED} = (1630)(1.5216) = 2480 \text{ psi (-)}$$

$$3) \sigma_z = \frac{PR}{t} = \frac{(1630)(3.3125)}{1.562} = 9607 \text{ psi}$$

$$\sigma_z \text{ CORRECTED} = (9607)(1.0846) = 10420 \text{ psi (-)}$$

$$4) \tau_{xy} = \frac{2 F_v}{A} = \frac{(2)(2464)}{10.70} = 461 \text{ psi (-)}$$

$$\tau_{xy} \text{ CORRECTED} = (461)(1.0652) = 491 \text{ psi (-)}$$

$$5) \tau_{yz} = \frac{M_v R}{J} = \frac{(105993)(3.3125)}{99.17} = 3540 \text{ psi (-)}$$

$$6) \tau_{xz} \text{ CORRECTED} = \tau_{xy} \text{ CORRECTED} = 491 \text{ psi (-)}$$

CALCULATION SHEET

PFR -051, Pg. 12 LAO 0513 6-73

CALC. NO. _____

SIGNATURE R. M. Johnson DATE 9-30-82

CHECKED ckw DATE 10/1/82

PROJECT ANPP (PVNGS)

JOB NO. 10407

SUBJECT PFR 2426 - PFR-051

SHEET 3 OF 4 SHEETS

HEAD SECTION ANALYSIS

$$\sigma_x = \left(\frac{\sigma_{x \text{ head } 11,12}}{\sigma_{x \text{ pipe } 11,12}} \right) \sigma_{x \text{ pipe } 76}$$

$$\sigma_x = \left(\frac{1286}{-1689} \right) (-2480) = \underline{1888 \text{ psi}}$$

$$\sigma_y = \left(\frac{-29635}{-25259} \right) (-10373) = \underline{-12170 \text{ psi}}$$

$$\sigma_z = \left(\frac{-10798}{-10389} \right) (-10420) = \underline{-10830 \text{ psi}}$$

$$\tau_{xy} = \tau_{xz} = \left(\frac{-4550}{-4425} \right) (-491) = \underline{-505 \text{ psi}}$$

$$\tau_{yz} \text{ (ASSUMED THE SAME AS PIPE SECTION)} = \underline{-3540 \text{ psi}}$$

CUBIC STRESS EQUATION

$$\sigma^3 + a\sigma^2 + b\sigma + c = 0$$

$$a = -(\sigma_x + \sigma_y + \sigma_z) = -[1888 + (-12170) + (-10830)] = \underline{21112}$$

$$b = (\sigma_x \sigma_y + \sigma_y \sigma_z + \sigma_x \sigma_z - \tau_{xy}^2 - \tau_{xz}^2 - \tau_{yz}^2)$$

$$= [(1888)(-12170) + (-12170)(-10830) + (1888)(-10830) - (-505)^2 - (-505)^2 - (-3540)^2]$$

$$= \underline{75,335,450}$$

$$c = -[(\sigma_x \sigma_y \sigma_z) + (2)(\tau_{xy})(\tau_{xz})(\tau_{yz}) - (\sigma_x)(\tau_{yz})^2 - (\sigma_y)(\tau_{xz})^2 - (\sigma_z)(\tau_{xy})^2]$$

$$= -[(1888)(-12170)(-10830) + (2)(-505)(-505)(-3540) - (1888)(-3540)^2 - (-12170)(-505)^2 - (-10830)(-505)^2] = \underline{-(2,292,408,141 \times 10^6)}$$



CALCULATION SHEET

PFR -051; pg 13 LAO 0513 8-73

CALC. NO. 5SIGNATURE R.M. Johnson DATE 9-30-82CHECKED dw DATE 10/1/82PROJECT ANPP (PVNGS)JOB NO. 10407SUBJECT PFR 2426-PFR-051SHEET 4 OF 4 TOTAL SHEETSPRINCIPAL STRESSES

$$\sigma_1 = 1918 \text{ psi}$$

$$\sigma_2 = -15133 \text{ psi}$$

$$\sigma_3 = -7898 \text{ psi}$$

$$\sigma_1 - \sigma_2 = 1918 - (-15133) = 17051 \text{ psi}$$

$$\sigma_2 - \sigma_3 = -15133 - (-7898) = -7235 \text{ psi}$$

$$\sigma_3 - \sigma_1 = (-7898) - (1918) = -9816 \text{ psi}$$

$$SI = \text{MAX. SHEAR STRESS INTENSITY} = 17051$$

$$SI < 1.2 S_h = 21000$$

$$\text{MARGIN of Safety} = \frac{21000}{17051} - 1 = .23$$

90821
A. MUIB/VEF

POTENTIAL FINDING REPORT
PVNGS QUALITY ASSURANCE VERIFICATION

PFR NO. 2426-PFR -051 REVISION Issue A

A. PREPARATION BY GA INITIATOR

AFFECTED ITEMS:

58/11 Containment penetration Number U76

REQUIREMENT REFERENCE DOCUMENTS:

1. ASME Boiler and Pressure Vessel Code, Div. 1, Sec. III, Subsection NC, 1974 and Code Case 1606.

BASIC REQUIREMENT:

1. The stress allowables specified in Reference 1 have to be met for upset condition loading combination for the penetration.
2. The stress allowables specified in Reference 1 have to be met for faulted loading combinations for the penetration.

DESCRIPTION OF POTENTIAL FINDING:

(See Page 1A)

PREPARED BY: M. Kushner DATE: 9/13/82

USE THE SPACE BELOW TO DOCUMENT ANY RE-REVIEW ACTION TAKEN BY INITIATOR ON THIS PFR.

SIGNATURE: _____ DATE: _____

B. REVIEW BY GA TASK LEADER

PFR NO. 2426-PFR -051, pg. 15

REVISION A Issue☐ REQUEST RE-REVIEW

BY: _____ DATE: _____

REASONS:

017A8A9389

017A8A9389

BY: F. Soper DATE: 9/15/82

BY: _____ DATE: _____

☒ AGREE PF IS VALID/INVALID☐ DISAGREE WITH INITIATOR

REASONS:

017A8A9389

I

017A8A9389

C, D. SEE ATTACHED SECTIONS C AND D (PAGE 3)

E. RECOMMENDATION BY FINDINGS REVIEW COMMITTEEDEFINITION: ☐ ADEQUATE ☐ INADEQUATEVALIDITY: ☐ VALID ☐ INVALIDCLASSIFICATION: ☐ OBSERVATION ☐ FINDING**JUSTIFICATION**

CLASSIFICATION CRITERION NO. RESULTING IN "FINDING" _____

COMMENT ON "OBSERVATION" OR "FINDING" CLASSIFICATION: _____

ADDITIONAL INFORMATION REQUIRED

017A8A9389

017A8A9389

017A8A9389

BY: _____ DATE: _____ BY: _____ DATE: _____

F. GA PROJECT MANAGER☐ ACCEPT☐ REJECT

BY: _____ DATE: _____

017A8A9389

PREPARED BY GA INITIATOR/TASK LEADER

PAGE NO. 1A

GJ00A

1. There is no indication that penetration upset allowable stresses were met. The upset piping loads exceed those given in the design specifications for the penetration (Attachment 1). The upset loads have been compared with the faulted allowable loads (Attachment 2) and stresses (Attachment 3) which is incorrect since faulted loads do not govern the penetration design. As shown in Attachment 3 for the key penetration, the normal and thermal loads govern the design. Thus the piping upset loads should have been compared with the normal and thermal allowable loads and stresses.
2. The actual piping loads for faulted condition loadings have not been checked for penetration U76. In their analysis Bechtel has generated Fr and Mr piping loads for the LOCA water hammer condition and has compared these loads with the faulted loads provided to Ametek in the Bechtel Design Specification (see Attachment 4). However, Ametek has not performed any faulted condition analysis for this penetration. What Ametek did was to establish that Normal plus Thermal loads governed the design of penetrations U11 and U12. In so doing, they computed the stresses in the flued head portion of the penetration under faulted condition loadings but not the pipe portion. Then, when evaluating penetration U76, they did not look at any condition other than normal plus thermal. Thus, they did not check faulted loads in penetration U76, either in the flued head or pipe portion of the penetration. Furthermore, it can be seen from the following table, that faulted condition loadings are greater than normal plus thermal loadings.

CONDITION	FR, LB.	MR, LB.	REFERENCE
Normal & Thermal	9660	256,200	Ametek Report #8-530286
Faulted	12,373	490,884	Bechtel Calc. ZZ-533A

C. REVIEW BY ORIGINAL DESIGN ORGANIZATION

PFR NO. 051 , pg. 17

REVISION: 1.1

☐ AGREE ☒ DISAGREE THAT POTENTIAL FINDING IS ACCURATEBY: Steelhead and J. M. Kern DATE: 9/23/87

IF THE "DISAGREE" BLOCK WAS CHECKED, USE THE SPACE BELOW TO PROVIDE INFORMATION THAT WOULD IMPROVE ACCURACY OR DEFINITION. (USE BACK FOR ADDITIONAL SPACE.)

1. The logic of PFR 051 attachment 2 is valid based on the following:
The intent is to show that the stresses resulting from the actual upset loadings result in a stress less than the Code allowable. The specified faulted condition loading produces a stress of 17765 psi which is less than the upset allowable stress of $1.2 S_h$ (21000 psi). Since the actual upset loading is less than the specified faulted loading, it follows that it too will produce a stress which is less than the Code allowable.

Attachment 1 of this PFR shows that the actual loadings on penetration 76 for the thermal, weight, and SAM (OBE) conditions are less than the specified loadings used by Ametek in their analysis. Thus, the normal + thermal category is acceptable by inspection. It is not possible to compare upset category stresses to normal + thermal category stresses since they involve different loading conditions.

2. All specified loading conditions were evaluated for penetration U76 by comparison to the analysis of key penetrations U11 and U12. The second paragraph on page 3 of Ametek report No. 8-530286 (Bechtel Log No. M500-10.01-114-1) for penetration U76 states that it was qualified by comparison to Ametek report No. 8-530188 (Bechtel Log No. 13-M-500-10.01-82-3) for key penetrations U11 and U12. Since the results for penetrations U11 and U12 satisfied all loading conditions, Ametek states that penetration U76 is also qualified for all loading conditions by comparison. Ametek analyzed penetration U76 for the normal + thermal loading condition to validate the assumption that penetration U76 could be qualified by comparison to the analysis of penetrations U11 and U12 since this loading condition produces the least margin of safety and is therefore controlling.

The piping portions of penetration U76 do not require a stress check for the
(Cont'd on page 4)

D. REVIEW BY GA INITIATOR

☐ AGREE PF IS INVALID

REASON:

BY: _____ DATE: _____

REVIEW BY GA TASK LEADER

☐ AGREE PF IS INVALID

REASON:

BY: _____ DATE: _____

(Cont'd from page 3)

specified faulted condition loadings. The specified faulted loads are the upper bound collapse loads. These loads are specified in order to assure that the flued head will maintain the pressure integrity of the Containment building for a postulated pipe rupture event. The upper bound collapse loading is the maximum load that can be transmitted by a pipe, and, by definition, will result in stress levels in the pipe exceeding Code allowables.



CALCULATION SHEET

PFR-051
pg. 19P208
AF-5024

LMO 0113 8-73

SIGNATURE E. T. Taylor DATE 8/19/82PROJECT ANPP-PUNGSCHECKED J. L. L. DATE 8/20/82SUBJECT AUX. FEEDWATER SYST.JOB NO. 10407-002
SHEET 88 OF 55 SHEETS

ATTACHMENT 1

PFR-051

CONTINUED ON SHEET 88

D.P. 390

COMP. RUN *NL-793 8/19/82

* NL-899 8/09/82

PENETRATION NO. 76 LOAD SUMMARY

REF- MELCH. PENETRATION ASSEMBLIES FOR ANPP (SPEC. #13-MM-500)

	RESULTANT FR (LBS)	RESULTANT MR (FT-LBS)	ALLOWABLE FR (LBS)	ALLOWABLE MR (FT-LBS)	REMARKS
THERMAL	97 -	929 -	1990 -	4396	O.K.
WEIGHT	289 -	594 -	850 -	1884	O.K.
SSE	2045 -	17,609 -	13640	30140	O.K.
SAM (OBE)	621 -	4604 -	6820 -	15,070 -	O.K.
(UPSET) WT+OBE	1356 -	10,066 -	1020 -	2261 -	SEE SHEETS 8C-8E
(EMERG) WT+OBE	1356 -	10,066 -	1530 -	3394 -	SEE SHEETS 8C-8E
(FAULTED) WT+SSE	2,273 -	18,126	93000 -	108333 -	O.K.

CALCULATION SHEET

PFR-051
Pg. 20

AROB
CALC. NO. AF-502A

LAO 01130-73

DATE 8/17/82

CHECKED

LD

DATE

8-17-82

ASPP (PUNGS)

JOB NO.

10407-002

EVALUATION OF CONTAINMENT PENETRATION

SHEET

8E

OF

55

SHEETS

ATTACHMENT 2

CONT ON SHT 8F

PFR-051

PENETRATION 75 76

RECONCILLATION FOR NU CASE. (BY USING FAULTED CONDITION)

THE ACTUAL CALCULATED PIPE LOADING FOR THE UPSET CONDITION (REFERENCE 1) EXCEEDS THE SPECIFIED UPSET CONDITION LOADING (REFERENCE 3)

- 1) THE LOADING COMBINATIONS FOR THE UPSET AND FAULTED CONDITIONS ARE TABULATED BELOW

LOADING CONDITION

LOADING COMBINATION

UPSET

$PO + DW + OBE + N_u$

FAULTED

$PO + DW + SSE + N_f + N_n$

WHERE $N_f > N_u > N_n$, $SSE = 2OBE$

- 2) THE MAXIMUM FAULTED CONDITION STRESS INTENSITY REPORTED BY REFERENCE 2 ON PAGE 4 IS 17.765 * PSI AND IS < THE UPSET CONDITION ALLOWABLE OF $1.2 S_R = 18,672$ PSI. THEREFORE BY APPLYING $(F_r)_{\text{FAULTED}} = 93,000$ LBS AND $(M_r)_{\text{FAULTED}} = 108,333$ FT-LBS. (REFERENCE 3), THE MAXIMUM STRESS INTENSITY WILL NOT EXCEED THE UPSET CONDITION ALLOWABLE.

- 3) ACTUAL UPSET VALUES (SPECIFIED) FAULTED
(REFERENCE 1) (REFERENCE 3)
- | | | |
|-----------------------|---|------------------|
| $F_r = 1,660$ LBS | < | $93,000$ LBS |
| $M_r = 10,336$ FT-LBS | < | $108,333$ FT-LBS |

- 4) AS IS EVIDENT FROM ITEMS 1, 2 AND 3 ABOVE THE ACTUAL CALCULATED UPSET LOADINGS FROM REFERENCE 1 ARE ACCEPTABLE AND WILL NOT RESULT IN A UPSET CONDITION STRESS INTENSITY $> 1.2 S_R$

* THE VALUE 17.765 PSI IS TAKEN FROM THE "KEY" PENETRATION NO. 11 & 12 BECAUSE THEY HAVE THE HIGHEST LOAD IN THEIR SIZE CLASS. THIS PERMITS A CONSERVATIVE PREDICTION OF THE STRESSES IN PENETRATIONS OF SIMILAR CONFIGURATION. (REFERENCE 2, PAGE 3)

AMETEK REPORT

8-530286

PFR-051, pg. 21

TABLE 1

ATTACHMENT 3

MARGINS OF SAFETY - PENETRATIONS 11 & 12						
Loading Condition Category	Loading Combination	Component	Critical Element No.	Maximum Stress Intensity PSI	Allowable Stress PSI	Margin of Safety Allowable S.I. -1
Design	PD	Flued Head	24	5454	$S_h = 17,500$	2.21
		Pipe	185	7984	$S_h = 17,500$	1.19
Normal	PO + DW + N_n	Flued Head	193	5177	$S_h = 17,500$	2.38
		Pipe	185	7155	$S_h = 17,500$	1.45
Upset	PO + DW + OBE + N_u	Flued Head	193	5300	$1.2 S_h = 21,000$	2.96
		Pipe	185	7248	$1.2 S_h = 21,000$	1.90
Emergency	PO + DW + OBE + N_e	Flued Head	193	5861	$1.8 S_h = 31,500$	4.37
		Pipe	185	7671	$1.8 S_h = 31,500$	3.11
Normal + Thermal	(PO+DW+ N_n) + (S_E + Eq)	Flued Head	24	34212	$S_h + S_A = 43,750$	.279
		Pipe	17	27352	$S_h + S_A = 43,750$	0.60
Faulted	PO+DW+SSE+ N_f + N_n	Flued Head	28-174	17765	$1.8 S_h = 31,500$	0.77

PD = Design Pressure psi
 PO = Operating Pressure psi
 DW = Dead Weight lbs.
 OBE = Operating Basis Earthquake lbs.
 N_n = Nozzle Load Under Normal Condition lbs.
 N_e = Nozzle Load Under Emergency Condition lbs.
 N_u = Nozzle Load Under Upset Condition lbs.
 S_E = Thermal Expansion Load lbs.
 Eq = Earthquake Anchor Displacement Load lbs.
 N_f = Nozzle Load Under Faulted Condition lbs.



CALCULATION SHEET

PER-051
Pg. 22

CALC. NO. 22-533A

UAG 0413-872

SIGNATURE _____

DATE _____

CHECKED _____

DATE _____

PROJECT _____

JOB NO. _____

SUBJECT _____

SHEET _____

OF _____

SHEETS

PENETRATION LOAD SUMMARY

PENETRATION No. 75,76

NODE POINT No. 430

		TH.	D.WT.	SSE	SAM _{SSE}	LOCA WATER HAMMER	FAULTED LOAD*	RESULTANT LOAD	ALLOWABLE
FORCES (LB)	F _x	463	43	312	106	971	1563	12,373	93,000
	F _y	5700	43	3054	178	5444	12074		
	F _z	416	31	836	144	1459	2205		
MOMENT (FT-LB)	M _x	17,989	32	8056	404	14,535	34,839	40,907	108,000
	M _y	1206	248	856	2354	2555	5557		
	M _z	9630	630	5072	482	8848	20,707		
SOURCE		SG 506 NC 110 3/9/81	SG 506 NC 110 3/9/81	SG 506 NC 448 6/15/82	SG 506 NC 110 3/9/81	NC 509 4/1/82	—	—	SPEC 13-1111-500

$$* \text{FAULTED LOAD} = \text{TH} + \text{D.WT} + [(\text{LOCA})^2 + (\text{SSE} + \text{SAM})^2]^{1/2}$$

Attachment 4

PER-051

IMPACT ASSESSMENT

PFR NO. 2426-PFR-051 REVISION ~~Issue-B~~

AFFECTED ITEM:

Containment Penetration Number U76

A. PREPARATION BY GA INITIATOR:

1. WHICH OF THE FIRST TWO POTENTIAL FINDING CLASSIFICATION CRITERIA APPLIES TO THIS PFR?

1 ☐, 2 ☐,

2. IN WHAT WAY MIGHT A SUBSTANTIAL SAFETY HAZARD BE CREATED AS A RESULT OF THE VIOLATION, DISCREPANCY OR ERROR (IF 1 OR 2 ABOVE WAS CHECKED)?:

3. OTHER COMMENTS: The upset loading combination were improperly shown to have met the ASME code stress allowables. However, analysis performed correctly shows that the stresses do meet the ASME Code allowables. The analysis has been attached.

PREPARED BY: M. Krishnan

DATE: 10/11/82

B. PREPARATION BY GA TASK LEADER:

1. COMMENT ON ABOVE REPLIES:

Concur with Initiator's assessment that the design meet appropriate ASME Code allowable limits.

2. DOES EVIDENCE EXIST OF MULTIPLE SIMILAR VIOLATIONS, DISCREPANCIES OR ERRORS? IF SO, LIST RELEVANT PFR NO'S:

N/A

3. IF POTENTIAL FINDING CLASSIFICATION CRITERIA 3, 4, OR 5 APPLIES, STATE WHICH ONE:

3 ☐, 4 ☐, 5 ☐

N/A

4. WHAT IS YOUR JUDGEMENT OF THE LIKELIHOOD OF MULTIPLE SIMILAR VIOLATIONS, DISCREPANCIES OR ERRORS ACTUALLY CREATING A SUBSTANTIAL SAFETY HAZARD - AND OF WHAT NATURE?

Not likely - BPC performed rigorous analysis for "key" penetrations (U11 and U12) which have the highest loads in their size class.

5. OTHER COMMENTS:

PREPARED BY: *[Signature]*

DATE: 10/4/82

CALCULATIONS FOR

EQUIP. NO.

PROJ. NO.

CALC. NO.

PAGE 1 OF 3

PREPARED BY M. Krishnam

DATE 9/30/82

REF. DOCUMENTS:

REVIEWED BY K. MOCH

DATE 10/1/82

2426-PFR-051, Rev. B
pg. 24

APPROVED BY

DATE

IMPACT ANALYSIS ON PENETRATION DESIGNUPSET CONDITION (PIPE Loads from Calc-502A)

$$F_R = 2 \times 1356 = 2712 \text{ lbs}$$

$$M_R = 2 \times 10,066 \times 12 = 241,584 \text{ IN-LBS}$$

STRESS ANALYSIS

(Component ratio from AMETEK Doc.)

$$F_A = 0.57735 F_R = 1566 \text{ lbs}$$

$$F_V = 0.8165 F_R = 2214 \text{ lbs}$$

$$M_T = 0.57735 M_R = 139,479 \text{ IN-LBS}$$

$$M_V = 0.8165 M_R = 197,253 \text{ IN-LBS}$$

$$\sigma_y = \frac{F_A}{A} + \frac{P_R}{2E} + \frac{M_{TC}}{I}$$

$$A = \frac{\pi}{4} (6.125^2 - 5.501^2)$$

$$= \frac{1566}{10.7} + \frac{1630(3.3125)}{2 \times 0.562} + \frac{197253}{14.987}$$

$$A = 10.7 \text{ IN}^2$$

$$= 1811 \text{ psi}$$

$$I = \frac{\pi}{4} (3.3125^4 - 2.75^4)$$

$$\sigma_{Y \text{ ANSYS}} = 1811 \times 0.6 = -10867 \text{ psi}$$

$$\frac{I}{C} = 14.987 \text{ IN}^3$$

$$\sigma_x = 1630 \times 1.5216 = -2480 \text{ psi}$$

$$\sigma_z = \frac{1630 \times 3.3125 \times 1.0846}{0.562} = -10420 \text{ psi}$$

CALCULATIONS FOR			
EQUIP. NO.	PROJ. NO.	CALC. NO.	PAGE 2 OF 3
PREPARED BY <i>M. Kuchman</i>	DATE <i>9/30/82</i>	REF. DOCUMENTS: <i>2426-PFR-051, Rev. B</i> <i>pg. 25</i>	
REVIEWED BY <i>H. MOCH</i>	DATE <i>10/1/82</i>		
APPROVED BY	DATE		

$$Z_{xy} = Z_{xz} = \frac{2V}{A} = \frac{2 \times 22.14}{10.7} = -414 \text{ psi}$$

$$Z_{xy, \text{ANSYS}} = 414 \times 1.0652 = 441 \text{ psi}$$

$$Z_{yz} = \frac{TR}{J} = \frac{TR}{2I} = \frac{139479}{2 \times 14.987} = -4653 \text{ psi}$$

$$P = -(\sigma_x + \sigma_y + \sigma_z) = 23767 = a$$

$$Q = 1.4398653 \times 10^8 = b$$

$$R = 2.2479758 \times 10^{11} = c$$

$\left. \begin{array}{l} P, Q, R \\ \text{defined in AMETEX} \\ \text{report in terms of } \sigma_x, \sigma_y, \sigma_z \\ Z_{xy}, Z_{yz}, Z_{xz} \end{array} \right\}$

$$Y = S^3 + PS^2 + QS + R = 0$$

$$Y = S^3 + 23767(S)^2 + 1.4398653 \times 10^8 (S) + 2.2479758 \times 10^{11} = 0$$

From MARKS handbook 2-29

Soln for cubic eqn:

$$X_1^3 = AX_1 + B$$

$$A = 3 \left(\frac{23767}{3} \right)^2 - 1.4398653 \times 10^8$$

$$= 44,303,566$$

$$B = -2 \left(\frac{23767}{3} \right)^3 + 6 \left(\frac{23767}{3} \right) - c$$

$$= -7.8552898 \times 10^{10}$$

$$\text{For } q^2 - p^3 = -4R$$

$$\cos(u) = \frac{q}{p\sqrt{p}}$$

$$u = 133.79$$

$$X_1 = 2\sqrt{p} \cos(u/3) = 5472$$

$$X_2 = 2\sqrt{p} \cos(u/3 + 120) = -7410$$

$$X_3 = 2\sqrt{p} \cos(u/3 + 240) = 1937$$

$$p = A/3$$

$$q = B/2$$

CALCULATIONS FOR			
EQUIP. NO.	PROJ. NO.	CALC. NO.	PAGE 3 OF 3
PREPARED BY <i>M. Krishnam</i>	DATE <i>9/30/82</i>	REF. DOCUMENTS: <i>2426-PFR-051, Rev. B</i>	
REVIEWED BY <i>R. MOCH</i>	DATE <i>10/1/82</i>	<i>pg. 26</i>	
APPROVED BY	DATE		

$\sigma = \sigma_1 - (a/3)$

$\sigma = -2450; -15332; -5985 \text{ psi}$

The maximum stress is 15332 psi

Allowable stress is $1.2 S_u = 1.2 \times 15560$ (from AMETEK ^{*S_u value*} Doc.)

$= 18672 \text{ psi}$

Design Margin $= \frac{18672}{15332} = 1$

DESIGN MARGIN $= 1.217$

Upset Condition (Pipe loads from Calc 502B, other end of the penetration)

$F_{R1} = 1772 \text{ lbs}$
 $M_{R1} = 63,234 \text{ in-lbs}$

} These loads are less than

the loads obtained from Calc. 502A for this loading condition i.e. $F_{R2} = 1356 \text{ lbs}$ & $M_{R2} = 120,792 \text{ in-lbs}$

Although F_{R2} is lower than F_{R1} , the M_R load is more dominant and since $M_{R2} > M_{R1}$, it more than compensates for the F_R load differential. As shown earlier F_{R2} & M_{R2} meets the stress allowable ($1.2 S_u$) and hence bounds the analysis for upset condition.

POTENTIAL FINDING REPORT
PVNGS QUALITY ASSURANCE VERIFICATION

PFR NO. 2426-PFR -052 REVISION Issue A

A. PREPARATION BY GA INITIATOR

AFFECTED ITEMS:

Auxiliary Feedwater Pump Motor No. M-AFB-P01

REQUIREMENT REFERENCE DOCUMENTS:

FSAR Appendix 3E, Environmental and Seismic Qualification Parameters on
Safety-Related Equipment

FSAR Appendix 3E, Table 3E-2; Safety-Related Pumps, AFP-001
(motor driven pump) Specification No. MM-021

BASIC REQUIREMENT:

BPC-Auxiliary Feedwater Pump, Section 4, Technical Requirements Specification
No. 13-MM-021 Revision 9, 2/17/82. The motor shall be qualified in
accordance with Appendix 4L (4L.3, all Class 1E motors shall comply with
IEEE-323, 1974.)

DESCRIPTION OF POTENTIAL FINDING:

(See Insert)

Continued on page 1A

PREPARED BY: M. Verdugo *M. Verdugo* DATE: 8-27-1982

USE THE SPACE BELOW TO DOCUMENT ANY RE-REVIEW ACTION TAKEN BY INITIATOR ON THIS PFR.

SIGNATURE: _____ DATE: _____

- 1) Westinghouse has not specified that the WCAP-8754, Environmental Qualification of Class 1E Motors for Nuclear Out-of Containment Use, is applicable to PVNGS Auxiliary Feedwater Pump Motor No. M-4FP-P01 and complies with PVNGS FSAR.
- 2) On Wyle laboratories report No. 57587, Aging Analysis for Auxiliary Feedwater Pumps, Bingham-Willamette has not addressed the following:
 - (a) Degradation due to mechanical cycling and humidity.
 - (b) The equipment analyzed is applicable for the Auxiliary Feedwater pumps with motor drives or Turbine drives or both.
 - (c) Margins to service conditions (temperature) have not been specified.
 - (d) 40-year dose plus accident dose plus post accident operating dose plus 10% margin has not been specified to the radiation service conditions.

B. REVIEW BY GA TASK LEADER

PFR NO. 2426-PFR -052

Issue
REVISION A

☐ REQUEST RE-REVIEW

BY: _____ DATE: _____

REASONS:

☒ AGREE PF IS VALID/~~INVALID~~

☐ DISAGREE WITH INITIATOR

REASONS:

BY: *FSoper* DATE: 8/31/82

BY: _____ DATE: _____

C., D. SEE ATTACHED SECTIONS C AND D (PAGE 3)

E. RECOMMENDATION BY FINDINGS REVIEW COMMITTEE

DEFINITION: ☒ ADEQUATE ☐ INADEQUATE

VALIDITY: ☐ VALID ☒ INVALID

CLASSIFICATION: ☐ OBSERVATION ☐ FINDING

JUSTIFICATION

CLASSIFICATION CRITERION NO. RESULTING IN "FINDING" _____

COMMENT ON "OBSERVATION" OR "FINDING" CLASSIFICATION:

ADDITIONAL INFORMATION REQUIRED

BY: *S. L. Koutz* DATE: 10/5/82

BY: _____ DATE: _____

F. GA PROJECT MANAGER

☒ ACCEPT

☐ REJECT

BY: *MA [Signature]* DATE: 10-6-82

C. REVIEW BY ORIGINAL DESIGN ORGANIZATION

PFR NO. 052

REVISION A

☐ AGREE ☒ DISAGREE THAT POTENTIAL FINDING IS ACCURATEBY: *John A. Schuch*DATE: 9/14/82 *V. J. Garrison*

IF THE "DISAGREE" BLOCK WAS CHECKED, USE THE SPACE BELOW TO PROVIDE INFORMATION THAT WOULD IMPROVE ACCURACY OR DEFINITION. (USE BACK FOR ADDITIONAL SPACE.)

1. Bingham-Willamette Company has been requested to provide a document that specifically states that WCAP-8754 applies to the Auxiliary Feedwater Pump Motors.
2. The following response to findings on the Wyle Aging Analysis for Auxiliary Feedwater Pumps report no. 57587, are based on revision A dated June 1, 1982. (Attachment 1 to this PFR).
 - a. Degradation due to humidity is addressed in Section 1.1 of revision A. Humidity is not considered an aging mechanism. Mechanical cycling is included in the pressure boundary analysis required per ASME Section III Code. Mechanical wear is considered in the design of the pump by the vendor.
 - b. The report identifies the equipment analyzed in Section 1.3 of revision A, where it states the equipment is the "Auxiliary Feedwater Pumps with Motor or Turbine Drivers".
 - c. Margins to service conditions (temperature) are addressed in Section 2.0 of revision A in the statement that margins are 15° F.
 - d. Radiation service conditions are specified in Section 2.0 of revision A as 1.1×10^5 RADS which includes a 10% margin. The radiation dosage covers the 40 yr dose ($<10^3$ RADS) plus accident dose and post accident dose (10^5 RADS in 24 hours) plus 10% margin.

D. REVIEW BY GA INITIATOR

☒ AGREE PF IS INVALID

REASON: Additional information has been provided as follows:

BY: *McKendigo*DATE: 10/5/1982

1) Bingham Willamette has provided a document (attached) stating that WCAP 8751 is applicable to PVNGS.

2) Wyle aging analysis has addressed margins & Auxiliary Feedwater Pump applicability.

REVIEW BY GA TASK LEADER

☒ AGREE PF IS INVALID

REASON: Concur with Initiator's recommendation to invalidate this PFR based on additional information provided by *BPC*.

BY: *f. S. Phelps*DATE: 10/5/82

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FOR ALL FEEDWATER	
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WYLE LABORATORIES

SCIENTIFIC SERVICES & SYSTEMS GROUP
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**ENGINEERING
REPORT**

PFR-052
pg. 5

Wyle Report No. 57587
Wyle Job No. 57587
Customer P.O. No. 1-70371
Total Pages this Report 12
Date: 9 July 1981

AGING ANALYSIS

Revision A
June 1, 1982

FOR
AUXILIARY FEEDWATER PUMPS
AND
ESSENTIAL COOLING WATER PUMPS
FOR
BINGHAM-WILLAMETTE COMPANY

Auxiliary Feedwater PumpBWC S.O. No.'sBechtel Tag No.'s

1A004	1M-AFB-PO1
1A005	3M-AFB-PO1
1A006	2M-AFB-PO1
1A007	1M-AFA-PO1
1A008	2M-AFA-PO1
1A009	3M-AFA-PO1
1A010	1M-AFN-PO1
1A011	2M-AFN-PO1
1A012	3M-AFN-PO1

Essential Cooling Water PumpBWC S.O. No.'sBechtel Tag No.'s

1A041	1-M-SPA-PO1
1A042	1-M-SPB-PO1
1A043	2-M-SPA-PO1
1A044	2-M-SPB-PO1
1A045	3-M-SPA-PO1
1A046	3-M-SPB-PO1

PREPARED BY:

Joel Cruikshank
Joel Cruikshank

VERIFIED BY:

Joe Rip
Joe Rip

APPROVED BY:

Don Tune
Don Tune

QUALITY ASSURANCE

Larry Housteau
Larry Housteau

MA21-187-2

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REPORT NO. 57587

PAGE NO. 1a

Revision A

[illegible]

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Revision A

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1.0 SCOPE

This document is prepared by Wyle Laboratories for Bingham-Willamette Company, hereinafter referred to as the equipment supplier, for use in Nuclear Power Generating Stations.

1.1 OBJECTIVE

The purpose of this report is to present the approach, methods, philosophies, and procedures for performing an aging analysis on Auxiliary Feedwater Pumps and Essential Cooling Water Pumps manufactured by the Bingham-Willamette Company, for use by the Arizona Public Service Company, Palo Verde Units 1, 2, and 3.

The aging analysis of non-metallic components will be based on two criteria:

1. Evaluation of susceptibility to radiation degradation.
2. Evaluation of susceptibility to time/temperature related mechanisms.

Damage levels and calculated lives will be determined solely by the individual effects of radiation and thermal aging. Humidity and dust are not considered aging mechanisms and are therefore not included in this evaluation (Ref. 1 & 2). There are no known synergistic effects on the subject materials under the specified service conditions. However, synergistic effects do exist with ethylene propylene under more severe conditions and are discussed in paragraph 4.1.

Contract specific material lists and system diagrams were provided by the equipment supplier for the purpose of evaluation.

1.2 APPLICABLE QUALIFICATION STANDARDS, SPECIFICATIONS, AND DOCUMENTS

- o Wyle Laboratories Western Test and Engineering Quality Assurance Manual 380, Revision A, 15 June 1980.
- o IEEE 323-1974 Standard for Qualifying Class IE Equipment for Nuclear Power Generating Station".
- o Bingham-Willamette Company Purchase Order No. 1-70371, dated 4/22/81, Aging Analysis of Non-Metallic Components.

1.3 EQUIPMENT DESCRIPTION

The equipment to be analyzed consists of the following:

1. Auxiliary Feedwater Pumps with Motor or Turbine Drivers, (Q Class) 4 x 6x10 1/2 B MSD 8 Stage, Section III Class 3.
2. Essential Cooling Water Pumps 24 x 38 VTM 1 Stage Pumps, Section III Class 3.

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2.0 DEFINITION OF SERVICE CONDITIONS

Environmental conditions as specified by the Equipment Supplier (Ref. 3 & 4). 150°F margin has been added to the service temperatures and 10% margin to the radiation dose (Ref. 5).

TABLE I

	<u>AF Pump</u>	<u>ECW Pump</u>
o Normal Temperature: (Standby)	1190 F	1310 F
o Design Temperature: (Operational)	1370 F	1370 F
o Maximum Temperature:	1370 F	1370 F
o Humidity:	95%	100%
o Radiation: (Total Integrated 40 year dose)	1.1×10^5 Rads	1.1×10^3 Rads
o Operating Time (Hrs) (40 year service including accident)	2278 (.26 yrs)	67639 (7.72 yrs)

3.0 EVALUATION CRITERIA

3.1 EVALUATION OF SUSCEPTABILITY TO RADIATION DEGRADATION

The approach for evaluating the components for their radiation resistance is a three step process:

1. Review the individual materials of construction as provided on the Contract Specific Materials List.
2. Research Wyle Laboratories Aging Library for information on threshold levels, severe damage levels, degradation characteristics, and failure criteria.
3. Provide evaluation based on potential material degradation and ability to perform its design function after exposure to the specified radiation dosage.

It is generally recognized that metallic and non-organic materials are insensitive to radiation degradation at the specified dosage and hence the evaluation is only on the organic materials.

3.2 EVALUATION OF SUSCEPTIBILITY TO TIME/TEMPERATURE RELATED MECHANISMS

Components of the subject pumps contain metallic, as well as non-metallic, materials. The deterioration due to thermal aging is judged to be insignificant for metallic and non-organic materials. Therefore, the aging of these components will be based on their organic materials.

For many organic materials, it is known that the degradation process can be defined by a single temperature-dependent reaction that follows the Arrhenius equation (Ref. 6 & 7):

$$k = A \exp \left(-\frac{E_a}{k_b T} \right) \quad (1)$$

where,

k	=	reaction rate
A	=	frequency factor
exp	=	exponent to base e
E _a	=	activation energy
k _b	=	Boltzmann's Constant (8.617 x 10 ⁻⁵ eV/K)
T	=	absolute temperature

It is further noted that, for many reactions, the activation energy can be considered to be constant over the applicable temperature range. Life is assumed to be inversely proportional to the chemical reaction rate (Ref. 6 & 8). In terms of life and after converting to Napierian base logarithms, equation (1) becomes:

$$\ln (\text{life}) = \left(\frac{E_a}{k_b} \right) \left(\frac{1}{T} \right) + \text{Constant} \quad (2)$$

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Equation (2) has the algebraic form:

$$y = mx + b$$

where,

$$y = \ln(\text{life})$$

$$x = 1/T$$

$$m = E_a/k_B, \text{ constant for single dominant reactions}$$

$$b = \text{constant}$$

The constants, m and b , can be estimated by fitting the experimental data in the form of $\ln(\text{life})$ versus $1/T$ to the above simple linear relationship.

The derivation of an acceleration factor is accomplished by taking the difference between any two points of the linear relationship.

Thus, if we substitute t for life into Equation (2), we obtain:

$$\ln t = (E_a/k_B)(1/T) + \text{Constant} \quad (3)$$

For the set of points (t_1, T_1) , Equation (3) becomes:

$$\ln t_1 = (E_a/k_B)(1/T_1) + \text{Constant} \quad (4)$$

For the set of points (t_2, T_2) , Equation (3) becomes:

$$\ln t_2 = (E_a/k_B)(1/T_2) + \text{Constant} \quad (5)$$

Subtracting Equation (4) from Equation (5) yields:

$$\begin{aligned} \ln t_2 - \ln t_1 &= (E_a/k_B)(1/T_2) + \text{Constant} \\ &\quad - (E_a/k_B)(1/T_1) - \text{Constant} \end{aligned} \quad (6)$$

Simplifying and rearranging of Equation (6) yields:

$$\ln (t_2/t_1) = -(E_a/k_B)(1/T_1 - 1/T_2) \quad (7)$$

Taking anti-logarithms yields:

$$t_2/t_1 = \exp -(E_a/k_B)(1/T_1 - 1/T_2) \quad (8)$$

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The acceleration factor (t_2/t_1), is the reciprocal of the time compression factor (t_1/t_2). Taking the reciprocal of Equation (8) yields:

$$t_1/t_2 = \exp(E_a/k_B)(1/T_1 - 1/T_2) \quad (9)$$

Solving Equation (9) for t_1 yields:

$$t_1 = t_2 \exp(E_a/k_B)(1/T_1 - 1/T_2) \quad (10)$$

Equation (10) can be used to derive the accelerated aging times for materials with known activation energies, e.g., for Ethylene Propylene the activation energy is 1.23eV for 60% elongation and equation (2) is:

$$\ln(\text{life}) = 14259.907(1/331.3) - 27.638$$

for a baseline temperature of 331.3°K (122°F + 15°F Margin)

$$T = 58.3^\circ\text{C} + 273 = 331.3^\circ\text{K}$$

$$\text{life} = 558 \text{ years}$$

In order to determine the life at the combined temperatures of normal and operating the excess life at the higher temperature can be used to calculate the normal service life.

$$558 - .26 = 557.74 \text{ yrs.}$$

Substituting into equation (10):

$$557.74 = t_2 \exp\left[\frac{1.23}{8.617 \times 10^{-5}}\right] \left[\frac{1}{331.3} - \frac{1}{321.3}\right]$$

$$t_2 = 2133 \text{ years}$$

Therefore, the calculated life is 2133 years including .26 years (2278 hrs) available for operating.

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4.0 EVALUATION

4.1 ETHYLENE PROPYLENE O-RINGS

Ethylene Propylene has been shown to exhibit synergistic effects of time/temperature, radiation total dose and radiation dose rate under more severe conditions than specified in this application (Ref. 2, 9 & 10). Since the testing of synergistic effects on Ethylene Propylene has been limited in range of environmental conditions no correlations can be quantitatively evaluated for the subject environmental conditions. Therefore this material's evaluation is based on the individual effects of radiation and time/temperature degradation.

The radiation damage threshold for Ethylene Propylene is 1×10^6 rads (Ref. 11) which is 9 times greater than the specified total integrated dose for the AF pump and 900 times greater than specified for the ECW Pump. Therefore Ethylene Propylene is not considered age-sensitive under the specified radiation.

The activation energy for Ethylene Propylene is 1.23eV (Ref. 12) based on 60% elongation. The calculated life is 2133 years and 848 years for the AF and ECW pumps respectively.

4.2 BUNA-N O-RINGS AND GASKETS

The radiation damage threshold for Buna-N (Nitrile rubber) is 2×10^6 Rads (ref. 13) which is 18 times greater than the requirement for the AF pumps and 1800 times greater than the requirement for the ECW pumps. Therefore Buna-N is considered not age-sensitive to radiation under the specified service conditions.

Applicable data for time/temperature evaluation is not available for Buna-N under the specified service conditions. However, based upon manufactures experience and recommendations Buna-N has a recommended replacement life of 5 years (Ref. 14).

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4.3 GARLOCK 5880 PACKING

Garlock 5880 packing is an Asbestos/Teflon blend (ref. 15). Since this composition is a blend and not a chemical bond, each material is addressed separately.

Asbestos is a non-organic material and is therefore considered not age-sensitive under the specified service conditions of radiation and time/temperature effects.

The radiation damage threshold for Teflon is 1.5×10^4 rads (ref. 11) which is 14 times the specified total integrated dose for the ECW pumps. The radiation damage of Teflon is the limiting aging mechanism for the ECW pumps under the specified service conditions. Time/temperature effects are negligible. Therefore, based on the radiation threshold of 14 times the total integrated dose the Garlock 5880 packing has an expected life of 560 years in the ECW pumps.

4.4 GARLOCK 7021 GASKETS

Garlock 7021 is a white asbestos with Styrene-Butadiene Rubber (SBR) binder (ref. 16). Since this composition is a blend and not a chemical bond, each material is addressed separately.

Asbestos is a non-organic material and is therefore considered not age-sensitive under the specified service conditions of radiation and time/temperature effects.

The radiation damage threshold for SBR is 2×10^6 rads (ref. 13) which is 18 times and 1800 times greater than the specified total integrated doses for the AF and ECW pumps respectively. Therefore, based on the radiation threshold of SBR, the Garlock 7021 gasket is not age-sensitive to the specified radiation doses for both the AF and ECW pumps.

The activation energy for SBR is 1.15eV (ref. 17) based on 40% loss of elongation. This calculated life is 821 years and 316 years for the AF and ECW pumps respectively.

4.5 ANCHOR "TARGET" GASKETS

Anchor "target" gasket material is an asbestos with Buna-N binder (ref. 18). Since this composition is a blend and not a chemical bond, each material is addressed separately. The asbestos material as stated in paragraph 4.3 is not age-sensitive. The Buna-N as stated in paragraph 4.2 has a recommended replacement life of 5 years.

WYLE LABORATORIESSCIENTIFIC SERVICES & SYSTEMS GROUP
WESTERN OPERATIONS, NORCO FACILITY

REPORT NO. 57587

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pg. 15

PAGE NO. 10

Revision A

5.0 SUMMARY TABLE

Calculated life is based solely on the individual effects of radiation and time/temperature degradation and the specified service conditions.

TABLE 2

<u>COMPONENT MATERIAL</u>	<u>AGING MECHANISM</u>		<u>CALCULATED LIFE (YEARS)</u>	
	<u>RADIATION</u>	<u>THERMAL</u>	<u>AF PUMP</u>	<u>ECW PUMP</u>
Ethylene Propylene	No	Yes	2133	848
Buna-N	No	Yes	5*	5*
Garlock 5880	No	No	NA	560
Garlock 7021	No	Yes	820	316
Anchor "Target"	No	Yes	5*	NA

NA = Not Applicable

* Buna-N recommended replacement life.

M021-187-2

11

6.0 REFERENCES

1. "Proposed Research on Class I Components to Test a General Approach to Accelerated Aging Under Combined Stress Environment," Kenneth T. Gillen, Edward A. Salazar, and Curtis W. Frank, Sandia Laboratories, July, 1977, Library Code 332-80
2. "Qualification Testing Evaluation Program Light Water Reactor Safety Research Quarterly Report October-December, 1978," Lloyd L. Bonzon, Kenneth T. Gillen, and Edward A. Salazar, Sandia Laboratories, NUREG/CR-0813 SAND 79-0761, Library Code 335-80
3. Bingham-Willamette Co. Letter to Wyle Laboratories, dated 9/5/80, Subject: Environmental Qualification of Pumps, Arizona Nuclear Power Project.
4. Bingham-Willamette Co. letter to Wyle Laboratories, dated 12/28/80, Subject: Environmental Qualification of Pumps, Arizona Nuclear Power Project.
5. Bingham-Willamette Co. letter to Wyle Laboratories dated 10-30-81, Subject: Wyle Report No. 57587 Revisions.
6. IEEE 101-1972, IEEE Guide for the Statistical Analysis of Thermal Life Test Data, Library code 265-80.
7. "A Review of Equipment Aging Theory and Technology," S.P. Carfagno and R.J. Gibson, No. NP 1558, EPRI Research Project 890-1, Sept. 1980.
8. Handbook of Engineering Fundamentals, Wiley, 1975, Library code 247-80.
9. "Qualification Testing Evaluation Program LWR Safety Research Quarterly Report," L. L. Bonzon, et. al., Sandia Laboratories, SAND 78/1452, November, 1978, Library Code 437-81
10. "Preliminary Data Report.- Testing to Evaluate Synergistic Effects from LOCA Environments," Frank V. Thome, Sandia Laboratories, No. SAND78-0718, April, 1978, Library Code 334-80
11. "Radiation Effects on Organic Materials in Nuclear Plants", M.B. Bruce & M.V. Davis, EPRI RP1707-3, Library Code 506-81.
12. "Qualification of Okoguard Ethylene-Propylene Rubber Insulation for Nuclear Plant Service (Medium-Voltage Cable and Field Splice)," Okonite Company, Form G-3, February 16, 1979, Library Code 313-80

WYLELABORATORIES SCIENTIFIC SERVICES & SYSTEMS GROUP
WESTERN OPERATIONS, NORCO FACILITYREPORT NO. 57587PAGE NO. 12

Revision A

6.0 REFERENCES (Continued)

13. "The Effect of Nuclear Radiation on Elastomeric and Plastic Materials," R. W. King, et. al., Battelle Radiation Effects Center, REIC Report No. 21, September 1, 1961, Library Code 286-80
14. Parker Seal Publication 12A, November 26, 1975.
15. Contact Report by J. Cruikshank, Wyle Laboratories, and D. Speck, Pacific Mechanical Supply, dated 6/16/81, Subject: Garlock 5880 Materials.
16. Garlock Publication GSK-288 Gasketing Materials, dated 1/81.
17. "Insulations and Jackets for Control and Power Cables in Thermal Reactor Nuclear Generating Stations," (Styrene-Butadiene Rubber Activation Energy), Robert B. Blodgett and Robert G. Fisher, IEEE Transactions on Power Apparatus Systems, Vol. PA5-88, No. 5, May, 1969, Library Code 051-78
18. Contact Report by J. Foglietta, Wyle Laboratories, and J. Rando, Anchor Packing Co., dated 6/1/82, Subject: Verify Anchor "Target" Gasket Material.

MO21-187-2

13

Attachment to
2426-PFR-052

PFR-052
Pg. 18

Bechtel Power Corporation

Engineers - Constructors

12400 East Imperial Highway

Norwalk, California 90650

MAIL ADDRESS

P.O. BOX 60860 - TERMINAL ANNEX, LOS ANGELES, CALIFORNIA 90060

TELEPHONE: (213) 864-6011



B/TPT-E-41865

MOC 219480

September 30, 1982

RECEIVED
W. A. SIMON

OCT 1 1982

Torrey Pines Technology
Post Office Box 81608
San Diego, CA 92138

Attention: Mr. W. A. Simon, Project Manager

COPIES.....

ROUTE.....

Subject: Arizona Nuclear Power Project FILE.....

Additional Information - PFR-052

File: D.46.02

Reference: B/TPT-E-41595 dated September 15, 1982

Dear Mr. Simon:

The enclosure is copy of the qualification document provided by Bingham-Willamette Company for the Auxiliary Feed Pump. Receipt of this document was an open item in our response to the subject PFR.

Very truly yours,

BECHTEL POWER CORPORATION

J. E. Mahlmeister

Project Engineer - TPT Evaluation

Los Angeles Power Division

JEM/mh

Enclosure: Bingham-Willamette transmittal letter and
WCAP-8751 Revision 1 dated September 23, 1982. (43 pages)

cc: E. E. Van Brunt, Jr. w/o encl.

James G. & Arthur Company

R		A
3	PEL. DESIGN	
2	PE STEINS	
1	APR. DESIGN	
	THE NATHAN	
	APR. ALLEY	
	RE IN MARK	
	CONNO 1	
	CONNO 2	
	DEL	
	PA	
	PEL. AND SMO	
	PA	CA
	ARCH	
	C/S	
	CONNOXES	
	ELIC	
	MECH	
	TRIPLEAR	
	PLANT DESIGN	
	SIP & SIF	
	CHEM	
	FO FIE	

57-15111-10014 J. L. - Huron, British Columbia Canada - Cambridge Ontario Canada - Edmonton Alberta Canada - Fort St. John E. 1970

SUBJECT Aux. Feedwater Pump MotorsCUSTOMER Bingham Willamette Co.USER Arizona Public Service; Palo Verde Sta. 1,2,3PURCHASE ORDER I-37815WESTINGHOUSE IDENTIFICATION PD-71420-L7; S.O. 77F14408OUTLINE DRAWING NUMBER 9509D96LUBRICANT Oil

This bibliography is issued as supporting data for WCAP-8754. It is to be considered a supplement to WCAP-8754.

Copies of the following documents are on file at Westinghouse, Buffalo, N. Y., and will be retained indefinitely. They are considered proprietary and will not be available for publication outside of Westinghouse, but are available for audit by qualified personnel. The documents are identified with the paragraph in WCAP-8754 to which they apply:

- *Para. 4-5 Thermal Cycling Tests, IS70-22, 7/10/70
- *Para. 4-6 Mechanical Cycling Tests, IS70-20, 4/26/71
- *Para. 4-7 Voltage Stress Tests, IS65-30, 11/28/67
- *Para. 5-2 Radiation Endurance Tests, WCAP-7829, 4/72
- *Para. 4-3 Thermal Endurance Tests, F.F. Trunzo letter to R. P. Griffenhagen 12/7/76.
- *Para. 4-4 Resistance to Moisture Environment, AD-3170

R. A. Gearhart

WESTINGHOUSE ELECTRIC CORPORATION
LARGE MOTOR DIVISION

*Raw data on file @ Westinghouse, Pittsburgh

Westinghouse WCAP-8754 Rev 1 and this supplement apply to motors serial Nos. S1-78, S1-79 & S1-80 of 77F14408, provided for Palo Verde Nuclear Generating Station.

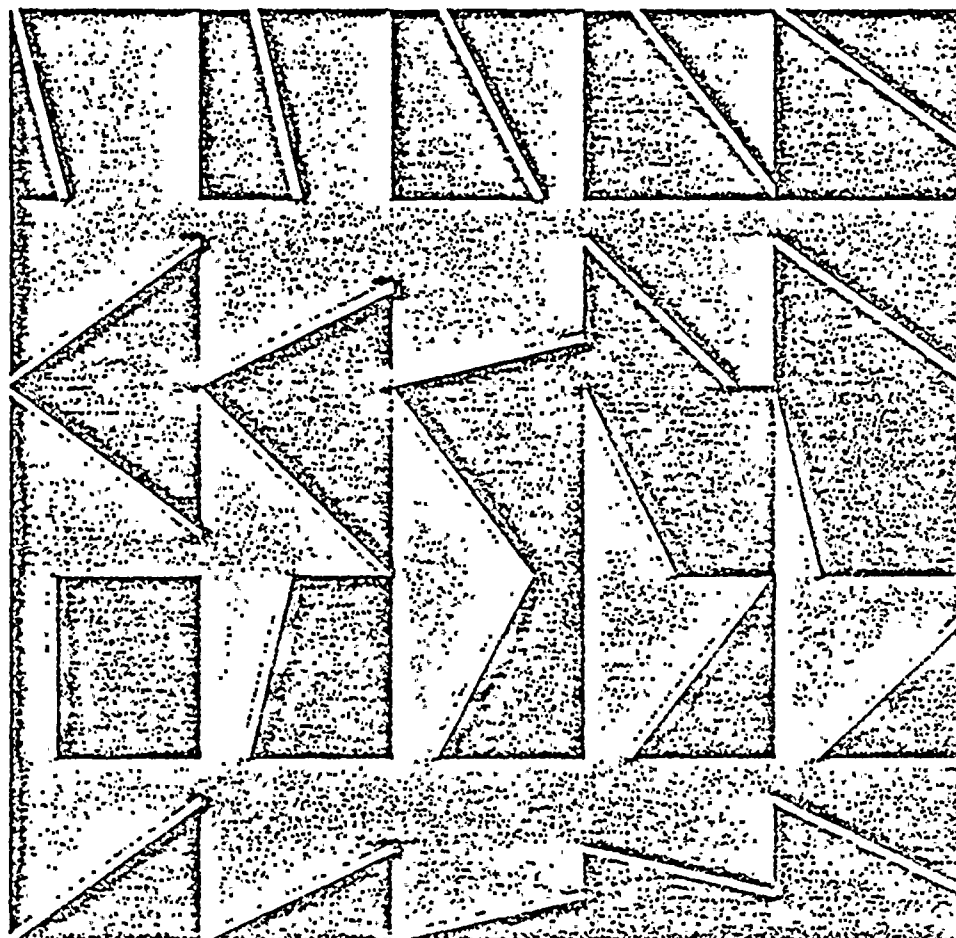
Certified

J. A. Rooks, P.E.

Westinghouse Portland

September 21, 1982

Environmental Qualification
of Class 1E Motors for
Nuclear Out-of-Containment Use



Westinghouse Electric Corporation
Large Motor Division

POTENTIAL FINDING REPORT
PVNGS QUALITY ASSURANCE VERIFICATION

PFR NO. 2426-PFR -053 REVISION Issue A

A. PREPARATION BY GA INITIATOR

AFFECTED ITEMS:

1" vent valve, 1PCTBV095, field verification.

REQUIREMENT REFERENCE DOCUMENTS:

P&ID 13-M-AFP-001, Rev. 10
Valve Designation List, 01-P-ZZG-015, Rev. 6

BASIC REQUIREMENT:

Valves should be tagged with a permanent tag containing the proper valve designation. Reference valve spec. 13-PM-221A (attached).

DESCRIPTION OF POTENTIAL FINDING:

1" vent valve 1PCTBV095 is tagged as 1PCTNV095. Actual installed valve is a dresser, S/N H642AAL. According to the valve designation list, 1PCTNV095 is a 1/2" valve, manufactured by Keenan. 1PCTBV095 is mistagged.

PREPARED BY: R. D. Phelps

DATE: 8-31-82

USE THE SPACE BELOW TO DOCUMENT ANY RE-REVIEW ACTION TAKEN BY INITIATOR ON THIS PFR.

SIGNATURE: _____ DATE: _____

B. REVIEW BY GA TASK LEADER

PFR NO. 2426-PFR -053

Issue
REVISION A☐ REQUEST RE-REVIEW

BY: _____ DATE: _____

REASONS:

☒ AGREE PF IS VALID ~~INVALID~~BY: Boyer DATE: 9/3/82☐ DISAGREE WITH INITIATOR

BY: _____ DATE: _____

REASONS:

C., D. SEE ATTACHED SECTIONS C AND D (PAGE 3)

E. RECOMMENDATION BY FINDINGS REVIEW COMMITTEE**ADDITIONAL INFORMATION REQUIRED**DEFINITION: ☒ ADEQUATE ☐ INADEQUATEVALIDITY: ☒ VALID ☐ INVALIDCLASSIFICATION: ☒ OBSERVATION ☐ FINDING**JUSTIFICATION**

CLASSIFICATION CRITERION NO. RESULTING IN "FINDING" _____

COMMENT ON "OBSERVATION" OR "FINDING" CLASSIFICATION:

Covered by PFR 083 (assuming
CAP for PFR 083 covers valves as well
as equipment) ^{SKK}
10/14/82

BY: S. H. Koutz DATE: 10/14/82

BY: _____ DATE: _____

F. GA PROJECT MANAGER☒ ACCEPT☐ REJECTBY: [Signature] DATE: 10-14-82

C. REVIEW BY ORIGINAL DESIGN ORGANIZATION

PFR NO. 053

REVISION A

☒ AGREE ☐ DISAGREE THAT POTENTIAL FINDING IS ACCURATEBY: [Signature] DATE: 9-30-82

IF THE "DISAGREE" BLOCK WAS CHECKED, USE THE SPACE BELOW TO PROVIDE INFORMATION THAT WOULD IMPROVE ACCURACY OR DEFINITION. (USE BACK FOR ADDITIONAL SPACE.)

The valve in question is not correctly tagged. An engineering investigation has determined that the installed valves meet all design requirements. Additionally, during the investigation it was noted that, as identified on the PFR, the two valves in the CT system have been given the VO 95 designation. This is contrary to the plant numbering system. To correct these mistagging and misnumbering errors, FCR 47.358-M and 47.359-P have been initiated. A copy is attached.

D. REVIEW BY GA INITIATOR

☐ AGREE PF IS INVALID

REASON:

BY: _____ DATE: _____

REVIEW BY GA TASK LEADER

☐ AGREE PF IS INVALID

REASON:

BY: _____ DATE: _____

REPORT MIRO24A
VERSION 072

VALVE DESIGNATION LIST
BY SYS/SEQ/SAFETY/UNIT
VALVE DESIGNATION LIST UNIT 1 AND COMMON

DATE 3/04/82
PAGE 312

UNIT: A-1 SYSTEM: - P.O.: - VENDOR NAME: -
P&ID: - SURPLUS VALVE: - DISCIPLINE: N

TAG NUMBER	SIZE	MARK NO	SYSTEM ENG S/U	PROJ CLS	RELEASE TO SHIP NO	ENV CDE	MATL CLS	LINE NO	AREA NO	PIPING DWG NUMBER	P & ID DRAWING NUMBER	CRD RV	SERIAL NUMBER
VENDOR DATA LOG NUMBER		DESIGN PRES	TEMP	OPERATION PRES	TEMP	BECHTEL SPEC/PO	P.O. ITEM REV	READ # SITE	VEND PROM AT SITE	REQSTN CD DATE	INSTALL CD DATE	REL TO S/U CD DATE	

CODE ACCOUNT SURPLUS VALVE ATTACH VENDOR NAME VEND SHP ORD REMARK

1PCTBV095 1.00 374 1AF01 01C 006E026 X HCCA 021 13MAFP001 C07 05 H642AAL
P221A-302-60 0025 0120 0025 0075 13PM221A 114 R-090681 I-111281 R-081281
N/A DRESSER

1PCTBV095 .50 372 1DW03 R2D 037E-001 N/A HCDA 035 13MCTP001 F-8
P403C-42 13PM403C 029
N/A KEENAN

1PCTBV096 .50 372 1CT01 S3D 038E-001 N/A HCDA 076 13MCTP001 D-7 03
P403C-42 13PM403C 029
N/A KEENAN

1PCTNV097 .50 372 1CT01 S3D 036E-001 N/A HCDA 076 13MCTP001 D-7 03
P403C-42 13PM403C 029
N/A KEENAN

1PCTEV111 1.00 01C N/A HCCA 071 13PM221C 016 6M086
N/A KEROTEST

1PCTNV114 1.00 376 1CT01 R2D 003E001 N/A HCDA 071 13PM224 006 3M007
P2240-302-38 N/A KEROTEST

1PCTNV195 1.00 376 1CT01 R2D 003E001 N/A HCDA 031 13PM224 006 3M007
P2240-302-38 0035 0120 0030 0075 N/A KEROTEST

1PCTNV195 1.00 376 1CT01 R2D 003E001 N/A HCDA 031 13PM224 006 3M007
P2240-302-38 N/A KEROTEST

TOTAL TOTAL TOTAL
VALVE REQUISITIONED INSTALLED TI RE

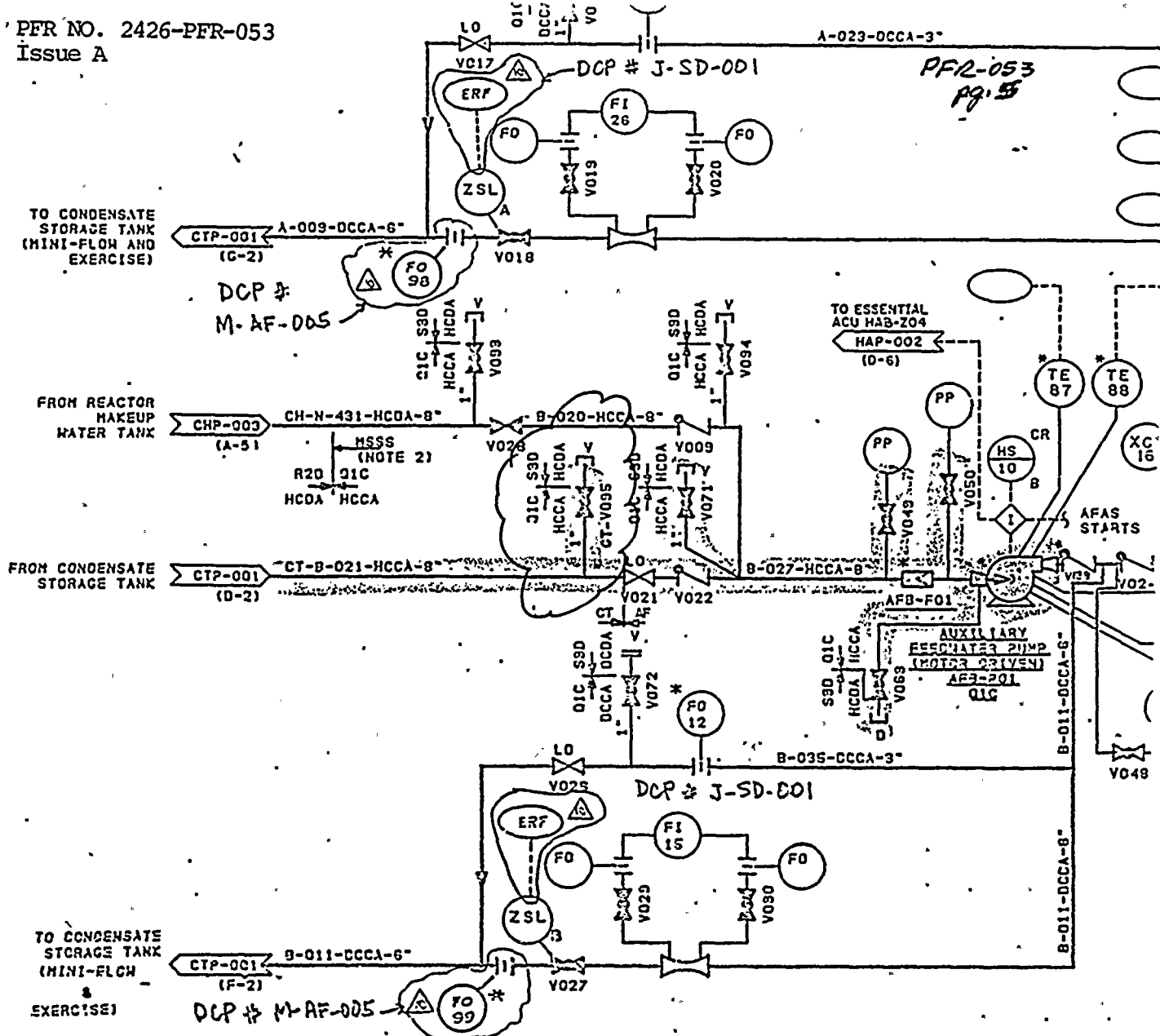
SYSTEM CT 85 72 80

TORREY PINES TECHNOLOGY
ARIZONA PUBLIC SERVICE-PVNGS

PACKAGE NO. 1-M1, PAGE 23 OF 27
SYSTEM AUXILIARY FEEDWATER
TAG NUMBERS 1PCTBV095
REPRODUCED FROM 01-P-276-015, REV. 6
DCN'S DONE
FCR'S NONE

This drawing has been produced by Bechtel and is the property of the PARTICIPANTS in the ARIZONA NUCLEAR POWER PROJECT. Use of this drawing

PFR NO. 2426-PFR-053
Issue A



NO.	DATE	REVISIONS	DR	CHK	DES	ENG	ECG	END	ENG	C
10	2/27	INCORPORATED DCN'S 27-34								
9	2/27	INCORP DCN 20 THRU 26								
8	2/27	INCORPORATED DCN 12, 13, 14, 15, 16, 17, 18, 19, 20, 21, 22, 23, 24, 25, 26, 27, 28, 29, 30, 31, 32, 33, 34, 35, 36, 37, 38, 39, 40, 41, 42, 43, 44, 45, 46, 47, 48, 49, 50, 51, 52, 53, 54, 55, 56, 57, 58, 59, 60, 61, 62, 63, 64, 65, 66, 67, 68, 69, 70, 71, 72, 73, 74, 75, 76, 77, 78, 79, 80, 81, 82, 83, 84, 85, 86, 87, 88, 89, 90, 91, 92, 93, 94, 95, 96, 97, 98, 99, 100								
7	2/27	RE-ROUTE TURBINE STEAM LEAK-OFFS AND VENTS ADDED MISC CHANGES CONSISTENCY CHECK								

PACKAGE NO. 1-MI, PAGE 9 OF 27
SYSTEM AUXILIARY FEEDWATER
TAG NUMBERS SEE FORM No. 3
REPRODUCED FROM 13-M-AFP-001, REV. 10
DCN'S NONE
FCR'S NONE

TORREY PINES TECHNOLOGY
ARIZONA PUBLIC SERVICE—PVNGS

PURCHASE ORDER
ARIZONA PUBLIC SERVICE COMPANY

PROJECT MANAGER AND OPERATING AGENT

P. O. Box 21666 Mail Station 3003

Phoenix, Arizona 85036

ARIZONA NUCLEAR POWER PROJECT
PALO VERDE NUCLEAR GENERATING STATION
UNITS 1, 2 & 3

TO **Dresser Industries**
Industrial Valve & Instrument Div.
3450 E. Spring St.
Long Beach, CA 90806
Attn: John Lucey
(213) 595-4691

In accepting this order, Supplier agrees to furnish the goods specified in full accordance with all conditions stated on face and back hereof, and any other page made a part of this order or revision hereto. Such conditions must be strictly complied with.

SHIP AND CONSIGN TO:

Arizona Public Service Company
c/o Bechtel Power Corporation
Palo Verde Nuclear Generating Station
3 Miles South of Wintersburg, Arizona

PFR NO. 2425-PFR-053

Issue A

pg. 6

PURCHASE ORDER NUMBER

10407-13-PM-221A

Supplier to reference this number in all shipments, correspondence and invoices

APS NUMBER

N-76-90051

Date **April 7, 1976**

Page **1** of **11** Pages

Reqn. No. **13-PM-221A Rev. 2**

Supplier's Promised Shipment

See P.O. Page #9

CORRESPONDENCE

Send copies of correspondence relating to prices or other commercial provisions of this purchase order to the attention of:
BECHTEL POWER CORPORATION
P. O. BOX 60860, L. A., CA. 90060
ATTENTION: BUYER SHOWN BELOW
Show Purchase Order Number on all packages, correspondence, and shipping papers

*TYPICAL COVER SHEET FOR
SPEC. 13-PM-221A.*

*ATTACHED SHEETS EXTRACTED
FROM REV. 14 OF THE SPEC.*

delay in payment.

NOTE: Use of this Purchase Order by ARIZONA PUBLIC SERVICE COMPANY is in its own behalf and Agent for the Salt River Agricultural Improvement and Power District, Southern California Edison Company, Public Service Company of New Mexico, El Paso Electric Company, Arizona Electric Power Cooperative, Inc. and any other participants as may be named, all tenants in common in the Palo Verde Nuclear Generating Station for which the purchases herein are being made.

GOODS: NUCLEAR SERVICE VALVES, 2" & SMALLER

All prices shown herein are subject to price adjustment. See P.O. Page #9.

SHIPPER(S): Dresser Industries

ORIGIN OF SHIPMENT(S): Alexandria, LA

SHIPPING TERMS: See P.O. Page #10

EST GROSS SHIPPING WEIGHT: 150,000#

ACCT. NO. REG. NO. 061

BUYER: T. J. Branham
PHONE: (213) 864-6011 Ext. 2227

PAYMENT TERMS Net 30 Days

TOTAL VALUE: \$ Not to exceed \$3,230,962.00
plus escalation in accordance
with the "Price Basis" clause
herein and freight at actual cost.

ARIZONA PUBLIC SERVICE COMPANY

By Harry Dunfee

DATE 4-7-76

13-PM-221A

4.12.4.1 All carbon steel valves including their actuators and stainless steel valve's handwheels, and valve actuators identified with an X (inside containment) or XX (Nuclear areas outside containment) in the environmental reference column of Bidding Schedule, attachment 5-2, shall have surface preparation and painting in accordance with appendix 4S (both prime and finish) Surface Preparation and Coating Requirements for Ferrous Metal Surfaces to be installed within the Containment and in Nuclear Areas Outside the Containment.

4.12.4.2 The surface preparation and painting for all carbon steel valves including their actuators and stainless steel valve's handwheels, and valve actuators outside the containment shall be painted in accordance with appendix 4P (both prime and finish) forming a part of the specification. The color shall be specified by the Purchaser.

4.12.5 (Deleted)

4.12.6 Stems of all valves shall be coated with a silicone lubricating grease preservative. Care shall be exercised that no grease preservative is inadvertently deposited on other valve parts.

4.12.7 (Deleted)

4.12.8 Valve ends shall be closed with suitable nonmetallic covers or plugs. The ends shall also be tightly sealed with pressure sensitive tape. Special provisions shall be implemented to protect weld end preparations during shipment, storage and handling. Pressure sensitive tapes shall be 3M Company, NO. 481 Plastic or Engineer approved equal.

4.12.9 Desiccants shall not be permitted.

4.12.10 Rust inhibiting coatings shall not be permitted on the internal surfaces.

4.13 STAMPING

All valves shall be stamped in accordance with the Code.

4.14 MARKING, IDENTIFICATION AND CRATING

4.14.1 All valves and their operators and accessories shall be provided with clearly impressed, stamped or etched stainless steel tag.

Valves 2 inch and smaller shall have the tag secured to the valve body by a stainless steel wire. The tag shall be supplied with the valve to the jobsite by the manufacturer. The valve manufacturer shall also furnish the wire for the tag as required.

INFORMATION
ONLY

4.14.2 The tag piece shall include the following:

- a. Purchase Order number.
- b. Master valve mark number and accessories (the master valve mark number shall appear on any loose accessory shipped with the valve) and/or instrument identification tag number for motor-operated or air operated valves.
- c. Project class
- d. Size
- e. Environmental Code "X" for valves which are located inside the containment, "XX" for valves which are located in nuclear areas outside the containment and "N/A" for valves in balance of the plant.
- f. Direction of flow arrow, unless it is cast in or stamped on valve body.

4.14.3 Deleted

4.14.4 Valves shall be marked additionally in accordance with the requirements of the Code.

4.14.5 All valves shall be boxed, crated or secured to skids and protected against damage during shipment, storage and handling in accordance with ANSI N45.2.2 Level C, except that motor operated valves shall conform to Level B. Each box, crate, or skid shall be marked for identification as follows:

- a. Purchase Order number
- b. Master valve mark numbers and accessories and/or instrument identification tag number for motor and air operated valves.

4.15 QUALITY PROGRAM REQUIREMENTS

The Supplier shall provide and implement a quality assurance program for this work as required by appendix 4C.


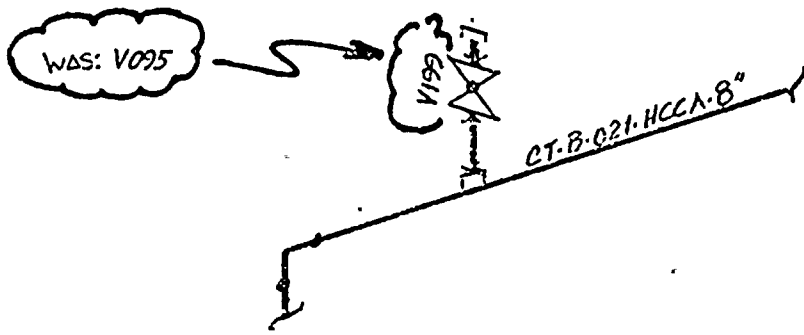
4.16 DRAWINGS AND DATA

4.16.1 It is recognized that the procedures, operations, tests and examinations which require submittal and documentation of results may be performed by organizations in addition to that of the Supplier (valve manufacturer), i.e., by a foundry, forging shop or testing agency independent of the Supplier. The organization which proposes to perform the activity shall prepare the procedure and documentation covering that

INFORMATION
ONLY

PAVO VERDE NUCLEAR GENERATING STATION FIELD CHANGE REQUEST JOB NO. 10407		1. PAGE <u>1</u> OF <u>1</u> QUALITY CLASS <u>Q</u>		2. NO. <u>47.358-M</u> 3. MO <u>9</u> DAY <u>28</u> YR <u>82</u> DATE		13A. DCN NO. 13B. SCN NO. <u>N/A</u>	
4. REF DWG OR SPEC <u>1.3 MAEP 001</u>		REV <u>10</u>		5. TITLE <u>P&ID (AUXILIARY FEED WATER)</u>			
6. DESIGN ORIGIN: <input checked="" type="checkbox"/> ENGINEERING <input type="checkbox"/> SUPPLIER (IDENTIFY BY NAME)				7. <input checked="" type="checkbox"/> UNIT 1 <input type="checkbox"/> UNIT 3 <input checked="" type="checkbox"/> UNIT 2 <input type="checkbox"/> COMMON			
8. EXISTING CONDITION <u>DUPPLICATE VALVE TAG NO. VALVE PCTRV095 TO</u> <u>BE CHANGED TO PCTRV199</u> <div style="text-align: right;"><u>S/U AFD1</u></div>							
9. CHANGE REQUEST/SKETCH <div style="text-align: center; padding: 20px;"> <p><u>@CRD [B-7]</u></p> <p><u>CT-B-021-HCCA-8"</u></p> </div>							
<u>CONCURRED W/ BEN YORK (X317) DOWNER 9/28/82</u>							
10. REVIEWED BY: <u>W. L. ...</u> DISCIPLINE FIELD ENGINEER <u>5.20.82</u> DATE				11. PREPARED BY: <u>C. R. DENMAN</u>			
DISCIPLINE FIELD ENGINEER _____ DATE _____				12. APPROVAL OF FIELD DISPOSITION: <u>9-28-82</u> <u>[Signature]</u> PROJECT FIELD ENGINEER DATE			
13. BECHTEL ENGINEERING <input type="checkbox"/> APPROVED <input type="checkbox"/> DISAPPROVED <u>PVS</u>							
GROUP SUPERVISOR _____		DATE _____		NUCLEAR GROUP SUPERVISOR (IF REQUIRED) _____		DATE _____	
PROJECT ENGINEER _____		DATE _____		PQAE (O-LISTED P&I AND SINGLE LINE DWGS) (QUALITY CLASS Q AND R SPECS) _____		DATE _____	
REMARKS <u>SYS. 38-VDL UPDATED P&I</u> <u>PAPER CHNG. TO P&I IN RESPONSE TO PFR 2426-PFR-053 Rev. A</u>							
DISTRIBUTION: ORIGINAL - PRINT COORDINATOR: COPIES TO - CLIENT, SURVEY, DISCIPLINE, AND RESIDENT ENGINEER							
ADDITIONAL DISTRIBUTION: <input type="checkbox"/> PROJECT PROCUREMENT MANAGER <input type="checkbox"/> COST TREND ENGINEER							

PFR-053 09.10

PALO VERDE NUCLEAR GENERATING STATION		1. PAGE <u>1</u> OF <u>1</u>		2. NO. <u>47.359-P</u>		13A. DCN NO.	
 FIELD CHANGE REQUEST JOB NO. 10407		QUALITY CLASS <u>Q</u>		3. MO DAY YR DATE <u>9</u> <u>28</u> <u>82</u>		13B. SCN NO. <u>N/A</u>	
4. REF DWG OR SPEC <u>13-P AFF 133</u>		REV <u>7</u>		5. TITLE <u>MSSS BLDG - AVE FEED</u>			
6. DESIGN ORIGIN: <input checked="" type="checkbox"/> ENGINEERING <input type="checkbox"/> SUPPLIER (IDENTIFY BY NAME)		7. <input checked="" type="checkbox"/> UNIT 1 <input type="checkbox"/> UNIT 3		<input checked="" type="checkbox"/> UNIT 2 <input type="checkbox"/> COMMON			
8. EXISTING CONDITION <u>Duplicate valve nos exist on 13-P AFF 133</u> <u>13-P ZYA 013</u>							
9. CHANGE REQUEST/SKETCH <div style="text-align: center;">  </div>							
10. REVIEWED BY: <u>30</u> <u>[Signature]</u> DISCIPLINE FIELD ENGINEER DATE <u>9-28-82</u>				11. PREPARED BY: <u>D.B. SIEGLING</u>			
DISCIPLINE FIELD ENGINEER DATE				12. APPROVAL OF FIELD DISPOSITION: <u>[Signature]</u> <u>9-28-82</u> PROJECT FIELD ENGINEER DATE			
13. BECHTEL ENGINEERING <input type="checkbox"/> APPROVED <input type="checkbox"/> DISAPPROVED							
GROUP SUPERVISOR		DATE		NUCLEAR GROUP SUPERVISOR (IF REQUIRED)		DATE	
PROJECT ENGINEER		DATE		POAE (O-LISTED P&I AND SINGLE LINE DWGS) (QUALITY CLASS Q AND R SPECS)		DATE	
REMARKS <u>SYS. 3B-VI/L UPDATED. PVS</u>							
<u>PHYSICAL RETAGGING REQD. TO BE DONE BY FIELD.</u> <u>IN RESPONSE TO</u> <u>PFR 2426-PFR-053 Rev. A</u>							
DISTRIBUTION: ORIGINAL - PRINT COORDINATOR; COPIES TO - CLIENT, SURVEY, DISCIPLINE, AND RESIDENT ENGINEER							
ADDITIONAL DISTRIBUTION: <input type="checkbox"/> PROJECT PROCUREMENT MANAGER <input type="checkbox"/> COST TREND ENGINEER							

IMPACT ASSESSMENT

PFR NO. 2426-PFR-053 REVISION Issue A

AFFECTED ITEM:

1" Vent Valve, 1PCTBV095

A. PREPARATION BY GA INITIATOR:

1. WHICH OF THE FIRST TWO POTENTIAL FINDING CLASSIFICATION CRITERIA APPLIES TO THIS PFR?

1 ☐, 2 ☐,

2. IN WHAT WAY MIGHT A SUBSTANTIAL SAFETY HAZARD BE CREATED AS A RESULT OF THE VIOLATION, DISCREPANCY OR ERROR (IF 1 OR 2 ABOVE WAS CHECKED)?:

3. OTHER COMMENTS:

Agree with ODO comments. No safety hazard exists.

PREPARED BY: R. D. Phelps

R. D. Phelps

DATE: 10-5-82

B. PREPARATION BY GA TASK LEADER:

1. COMMENT ON ABOVE REPLIES:

*Concur with Initiator's impact assessment.
Note corrective action implemented by APS.*

2. DOES EVIDENCE EXIST OF MULTIPLE SIMILAR VIOLATIONS, DISCREPANCIES OR ERRORS? IF SO, LIST RELEVANT PFR NO'S:

*PFR-083 (5 valves mistagged);
PFR-081 (3 valves mistagged or wrong mfg. ID); PFR-089 (missing tags)*

3. IF POTENTIAL FINDING CLASSIFICATION CRITERIA 3, 4, OR 5 APPLIES, STATE WHICH ONE:

3 ☐, 4 ☐, 5 ☐

4. WHAT IS YOUR JUDGEMENT OF THE LIKELIHOOD OF MULTIPLE SIMILAR VIOLATIONS, DISCREPANCIES OR ERRORS ACTUALLY CREATING A SUBSTANTIAL SAFETY HAZARD - AND OF WHAT NATURE?

5. OTHER COMMENTS: *ODO has not responded to PFRs-081, -083, and -089 to date; therefore the applicability of Items 3 and 4 above can not be ascertained at this time.*

PREPARED BY: *Boyle*

DATE: 10/6/82



POTENTIAL FINDING REPORT
PVNGS QUALITY ASSURANCE VERIFICATION

PFR NO. 2426-PFR 054 REVISION Issue A

A. PREPARATION BY GA INITIATOR

AFFECTED ITEMS:

As-Built Log, Units 1, 2, and 3.

REQUIREMENT REFERENCE DOCUMENTS:

Bechtel IP-4.33, Rev. 4, 5/8/80, para. 2.0, 4th sentence.

BASIC REQUIREMENT:

The As-Built Log is a compilation of selected non-incorporated cross references which define as-built conditions of each unit and which are not included in other permanent logs or documents.

DESCRIPTION OF POTENTIAL FINDING:

FCR 17191 to 13P-SIF-214 has DCN #10 in Block 13A (i.e., to be incorporated in drawing by Rev.). However, FCR 17191 is listed in As-Built Log for Units 1, 2, and 3. (DCN #10 is shown as incorporated in Rev. 5 of drawing 13P-SIF-214).

FCR 17191 has already been incorporated in Rev. 5 and should not be in As-Built Log.

PREPARED BY: W. P. Malay *W.P. Malay* DATE: 9/3/82

USE THE SPACE BELOW TO DOCUMENT ANY RE-REVIEW ACTION TAKEN BY INITIATOR ON THIS PFR.

SIGNATURE: _____ DATE: _____

B. REVIEW BY GA TASK LEADERPFR NO. 2426-PFR 054REVISION Issue A☐ REQUEST RE-REVIEW

BY: _____ DATE: _____

REASONS:

☒ AGREE PF IS VALID/~~INVALID~~BY: J. Burrell DATE: 9/7/82☐ DISAGREE WITH INITIATOR

BY: _____ DATE: _____

REASONS:

C., D. SEE ATTACHED SECTIONS C AND D (PAGE 3)**E. RECOMMENDATION BY FINDINGS REVIEW COMMITTEE**DEFINITION: ☒ ADEQUATE ☐ INADEQUATEVALIDITY: ☐ VALID ☒ INVALIDCLASSIFICATION: ☐ OBSERVATION ☐ FINDING**JUSTIFICATION**

CLASSIFICATION CRITERION NO. RESULTING IN "FINDING" _____

COMMENT ON "OBSERVATION" OR "FINDING" CLASSIFICATION:

ADDITIONAL INFORMATION REQUIREDBY: S. A. Kouty DATE: 9/29/82 BY: _____ DATE: _____**F. GA PROJECT MANAGER**☒ ACCEPT☐ REJECTBY: [Signature] DATE: 9/30/82

C. REVIEW BY ORIGINAL DESIGN ORGANIZATION

PFR NO. 054

REVISION A

☐ AGREE ☒ DISAGREE THAT POTENTIAL FINDING IS ACCURATEBY: K/B A. Atkins DATE: 9/17/82

IF THE "DISAGREE" BLOCK WAS CHECKED, USE THE SPACE BELOW TO PROVIDE INFORMATION THAT WOULD IMPROVE ACCURACY OR DEFINITION. (USE BACK FOR ADDITIONAL SPACE.)

The inclusion of additional (although unnecessary) cross-referencing information in the As-Built Log is not considered to be a defect. The inclusion of an FCR in the As-Built Log which was subsequently incorporated into drawing does not compromise the overall intent and usefulness of the document.

D. REVIEW BY GA INITIATOR

☒ AGREE PF IS INVALID

REASON: The PFR meets the invalid definition of Proc. 2426-PD-16. (The item reported to be in error on the As Built Log is on the "safe" side as opposed to the omission of item on the Log.

BY: W.P. Mahat DATE: 9/24/82

REVIEW BY GA TASK LEADER

☒ AGREE PF IS INVALIDREASON: No conceivable safety impactBY: J. Brown DATE: 9/27/82



POTENTIAL FINDING REPORT
PVNGS QUALITY ASSURANCE VERIFICATION

PFR NO. 2426-PFR-055 REVISION Issue A

A. PREPARATION BY GA INITIATOR

AFFECTED ITEMS:

1. Auxiliary feedwater flow measurement instrumentation (FT-41B; FI-41A)
2. Auxiliary feedwater pump: outlet pressure measurement instrumentation (PT-17; PI-17A)

REQUIREMENT REFERENCE DOCUMENTS:

1. NUREG-0558, "Environmental qualification of Safety Related Equipment."
2. FSAR Vol. VI, Sec. 3.0 Appx. 3.E

BASIC REQUIREMENT:

Ref. 2. Gives environmental qualification conditions which includes "dust" requirements for buildings containing safety related equipment.

DESCRIPTION OF POTENTIAL FINDING:

1. The affected Bechtel Procurement Specs do not include dust in their environmental qualification requirements.
 - a) Bechtel Spec. 13-JM-111
 - b) Bechtel Spec. 13-JM-311
2. The equipment has not been qualified for the dust environment.

PREPARED BY: Alan Middleton *Alan Middleton* DATE: 9/7/83

USE THE SPACE BELOW TO DOCUMENT ANY RE-REVIEW ACTION TAKEN BY INITIATOR ON THIS PFR.

SIGNATURE: _____ DATE: _____

B. REVIEW BY GA TASK LEADER

PFR NO. 2426-PFR -055

Issue
REVISION A☐ REQUEST RE-REVIEW

BY: _____ DATE: _____

REASONS:

☒ AGREE PF IS VALID/~~INVALID~~BY: FSoper DATE: 9/13/82☐ DISAGREE WITH INITIATOR

BY: _____ DATE: _____

REASONS:

C., D. SEE ATTACHED SECTIONS C AND D (PAGE 3)

E. RECOMMENDATION BY FINDINGS REVIEW COMMITTEE

ADDITIONAL INFORMATION REQUIRED

DEFINITION: ☒ ADEQUATE ☐ INADEQUATEVALIDITY: ☒ VALID ☐ INVALIDCLASSIFICATION: ☒ OBSERVATION ☐ FINDING

JUSTIFICATION

CLASSIFICATION CRITERION NO. RESULTING IN "FINDING" _____

COMMENT ON "OBSERVATION" OR "FINDING" CLASSIFICATION:

FSAR required that this equipment be qualified for a dust environment but the Spec did not include this requirement. Items outside control room are provided with dust covers. Items located in control room are protected by the control room air conditioning system.

BY: S. A. Kony DATE: 10/1/82 BY: _____ DATE: _____

F. GA PROJECT MANAGER

☒ ACCEPT☐ REJECTBY: MA Shuman DATE: 10/1/82

☒ AGREE ☒ DISAGREE THAT POTENTIAL FINDING IS ACCURATE

BY: K. Suterby M. Stew DATE: 9-23-82

IF THE "DISAGREE" BLOCK WAS CHECKED, USE THE SPACE BELOW TO PROVIDE INFORMATION THAT WOULD IMPROVE ACCURACY OR DEFINITION. (USE BACK FOR ADDITIONAL SPACE.)

1(a) AGREE

1(b) THE FOLLOWING PRESSURE TRANSMITTERS, TAG NO'S

1JAFB-PT-0017

1JAFB-FT-0041B

WERE PURCHASED WITH NEMA 4 ENCLOSURES
AS SHOWN ON DATA SHEETS:

13-J-011-001

13-J-011-086

NEMA 4 ENCLOSURES PROVIDE PROTECTION
AGAINST DUST PER ATTACHED DOCUMENT.

D. REVIEW BY GA INITIATOR

☐ AGREE PF IS INVALID

REASON:

BY: _____ DATE: _____

REVIEW BY GA TASK LEADER

☐ AGREE PF IS INVALID

REASON:

BY: _____ DATE: _____

PFR-055
Page 4

Suffix	Ventilated Enclosures
CV	Convection Ventilation (by natural convection)
FV	Forced Ventilation without air filter (positive pressure in enclosure)
EFV	Evacuation Forced Ventilation without filter (negative pressure in enclosure)
FVF	Forced Ventilation with inlet air Filter (positive pressure in enclosure)
EFVF	Evacuation Forced Ventilation with inlet air Filter (negative pressure in enclosure)
FVFF	Forced Ventilation with inlet air Filter and outlet air Filter (positive pressure in enclosure)
EFVFF	Evacuation Forced Ventilation with inlet air Filter and outlet air Filter (negative pressure in enclosure)

"Positive pressure" means greater than atmospheric pressure;
 "negative pressure" means less than atmospheric pressure.

The entrance of dust into ventilated enclosures can be minimized by the addition of a filter system. However, when considerable air contamination exists and forced ventilation is required, filters may fail rapidly, and it may be necessary to bring in air from a remote location.

Table 1-110-1
 Enclosures for Indoor Nonhazardous Locations (See ICS 1-110.06)

Provides Protection Against	Type of Enclosure							
	1*	2*	3*	4X	6	11	12*	13
Accidental contact with enclosed equipment	yes	yes	yes	yes	yes	yes	yes	yes
Falling liquids and light splashing	yes	yes	yes	yes	yes	yes	yes	yes
Falling liquids, fibers and flyings	...	yes	yes	yes	yes	yes	yes	yes
Hosedown and splashing water	...	...	yes	yes	yes	...	...	yes
Oil and coolant seepage	...	...	...	...	...	...	yes	yes
Oil and coolant spraying and splashing	...	...	...	...	...	...	...	yes
Corrosive agents	...	...	...	yes	yes	yes	...	...
Occasional submersion	...	...	...	...	yes	...	...	...

Table 1-110-2
 Enclosures for Outdoor Nonhazardous Locations (See ICS 1-110.06)

Provides Protection Against	Type 3	Type 3R*	Type 3S	Type 6
Accidental contact with enclosed equipment	yes	yes	yes	yes
Rain, snow and sleet	yes	yes	yes	yes
Sleet	...	...	yes	...
Windblown dust	yes	...	yes	yes
Hosedown	...	...	...	yes
Occasional submersion	...	...	...	yes

*These enclosures may be ventilated, except that Type 12 will not be dusttight if ventilated. Consult the apparatus manufacturer. See ICS 1-110.07.

†External operating mechanisms are not required to be operable when the enclosure is ice covered.

‡External operating mechanisms are operable when the enclosure is ice covered.

§ Subparagraph and Tables approved as Authorized Engineering Information 7-16-1969, Table of suffixes approved as NEMA Standard 7-16-1969.

ICS 1-110.15 ~~Type 4~~ Watertight and
Indoor

.1 NONVENTILATED ENCLOSURES

Type 4 enclosures are intended for use indoors to protect the enclosed equipment against splashing water, seepage of water, falling or hose-directed water and severe external condensation. They shall have conduit hubs or equivalent provision for watertight connection at the conduit entrance and mounting means external to the equipment cavity.

.2 DESIGN TEST

The design test for Type 4 nonventilated enclosures is the hosedown test described in ICS 1-110.56.

ICS 1-110.16 Type 4X—Watertight,
Dusttight and Corrosion-
resistant—Indoor

.1 NONVENTILATED ENCLOSURES

Type 4X enclosures have the same provisions as Type 4 enclosures and, in addition, are corrosion-resistant.

.2 DESIGN TESTS

The design tests for Type 4X nonventilated enclosures are the following:

- (a) The hosedown test described in ICS 1-110.56.
- (b) The corrosion-resistance test described in ICS 1-110.58.A

.3 APPLICATION LIMITS

If application conditions are more severe than those represented by the design test for corrosion resistance in ICS 1-110.58, the manufacturer should be consulted.○

ICS 1-110.17 Type 5—Superseded
by Type 12 for
Control ApparatusICS 1-110.18 Type 6—Submersible,
Watertight, Dusttight and
Sleet- (Ice-) resistant—
Indoor and Outdoor

PFR-055

Page 5

.1 NONVENTILATED ENCLOSURES

Type 6 enclosures are intended for use indoors or outdoors where occasional submersion is encountered. They shall protect the enclosed equipment against a static head of water of 6 feet for 30 minutes, dust, splashing or external condensation of noncorrosive liquids, falling or hose directed water, lint and seepage. They are not sleet- (ice-) proof. They shall have conduit hubs or equivalent provision for watertight connection at the conduit entrance and mounting means external to the equipment cavity.

.2 DESIGN TESTS

The design tests for Type 6 nonventilated enclosures are the following:

- (a) The submersion test described in ICS 1-110.59.
- (b) The external-icing test described in ICS 1-110.55.A

ICS 1-110.19 Type 7, 8, 9 and 10
Enclosures

These enclosures are for use in hazardous locations. See ICS 1-110.23 through ICS 1-110.27.○

ICS 1-110.20 Type 11—Corrosion-
resistant and Dripproof—
Oil-immersed—Indoor

.1 NONVENTILATED ENCLOSURES

Type 11 enclosures are corrosion-resistant and are intended for use indoors to protect the enclosed equipment against dripping, seepage and external condensation of corrosive liquids. In addition, they protect the enclosed equipment against the corrosive effects of fumes and gases by providing for immersion of the equipment in oil. They shall have conduit hubs or equivalent provision for watertight connection at the conduit entrance and mounting means external to the equipment cavity.

FROM: ALAN MIDDLETON LOCATION: 14/135 DATE: 9/20/82
TO: F.S. OPLE LOCATION: TIE-151 DATE: PFR-055
pg. 6

TELEPHONE COMMUNICATION RECORD

(PLEASE HAND LETTER LEGIBLY IN BLACK OR RED INK)

Attachment to
2426-PFR-055

CALL INITIATED BY: ALAN MIDDLETON AT GAC ☒ OTHER: _____
CALL RECEIVED BY: JIM MARK MEISTER AT GAC ☐ OTHER: BECHTEL
OTHER PARTICIPANTS: D. SOUTERPOULIS (BECHTEL)

DATE: 9/20/82 TIME: 11.00 PROGRAM NAME: PVNGS PROGRAM NUMBER: 2426.600.200
SUBJECT: PFR-055: DUST ENVIRONMENT.

SUMMARY:

① I POINTED OUT THAT ^{THE FACT THAT} ~~TWO~~ ^{WERE MOUNTED IN THE} ENCLOSES
WAS ADEQUATE PROTECTION FROM THE DUST ENVIRONMENT.

② SOUTERPOULIS (INSTR. ENG) POINTED OUT THAT THEY DO
NOT HAVE ANY ADDITIONAL DOCUMENTATION AT THIS
TIME ON THE ^{FOXBORO} TWO INDICATORS IN THE CONTROL ROOM.
HE DID POINT OUT THAT AS PART OF THERE
EQUIPMENT QUAL. PROGRAM, FOXBORO IS COLLECTING
INSTRUMENTS THAT HAVE BEEN AGED FOR LONG
PERIODS OF TIME (5-10 YRS) IN THE FIELD (SOME IN QUITE
DUSTY ENVIRONMENTS SUCH AS CEMENT PLANTS).

FOXBORO IS GOING TO PUT TOGETHER A LIST OF SIMILAR
EQUIPMENT FROM SUCH PLANTS.

UNFORTUNATELY SUCH INFO. WILL NOT BE AVAILABLE
FOR 3-4 WKS.

SINCE THE CONTROL ROOM HAS A SEPARATE
HVAC SYSTEM THAN THE REST OF THE BUILDING
THERE WILL PROBABLY BE LITTLE OR NO DUST BECHTEL
DISTRIBUTION. FELT THAT THE INSTRUMENTS SHOULD HAVE
NO PROBLEM FUNCTIONING ^{CORRECTLY} IN THE CONTROL ROOM. File No.: _____

IMPACT ASSESSMENT

PFR NO. 2426-PFR-055 REVISION Issue A

AFFECTED ITEM: 1. Auxiliary Feedwater Flow Measurement (FT-41B; FI-41A)
2. Auxiliary Feedwater Pump - Outlet Pressure Measurement/PT-17; PI-17A)

A. PREPARATION BY GA INITIATOR:

1. WHICH OF THE FIRST TWO POTENTIAL FINDING CLASSIFICATION CRITERIA APPLIES TO THIS PFR?

1 ☐, 2 ☐,

2. IN WHAT WAY MIGHT A SUBSTANTIAL SAFETY HAZARD BE CREATED AS A RESULT OF THE VIOLATION, DISCREPANCY OR ERROR (IF 1 OR 2 ABOVE WAS CHECKED)?:

3. OTHER COMMENTS: See attached page 2.

PREPARED BY: A. MiddletonAlan MiddletonDATE: 9/30/82

B. PREPARATION BY GA TASK LEADER:

1. COMMENT ON ABOVE REPLIES: Concur with the Initiator's assessment that this discrepancy has no impact on design adequacy.2. DOES EVIDENCE EXIST OF MULTIPLE SIMILAR VIOLATIONS, DISCREPANCIES OR ERRORS? IF SO, LIST RELEVANT PFR NO'S: PFR - 062

3. IF POTENTIAL FINDING CLASSIFICATION CRITERIA 3, 4, OR 5 APPLIES, STATE WHICH ONE:

3 ☐, 4 ☐, 5 ☐ N/A

4. WHAT IS YOUR JUDGEMENT OF THE LIKELIHOOD OF MULTIPLE SIMILAR VIOLATIONS, DISCREPANCIES OR ERRORS ACTUALLY CREATING A SUBSTANTIAL SAFETY HAZARD - AND OF WHAT NATURE?

Not likely.

5. OTHER COMMENTS:

PREPARED BY: F. SoperDATE: 10/1/82

Page 2 to Impact Assessment - PFR-2426-055, Issue A

1. Bechtel has pointed out that flow transmitter (FT-41B) and Pressure Transmitter (PT-17) are mounted in NEMA 4 enclosures, which are dustproof. Having reviewed the NEMA 4 enclosure specs, I am satisfied that the dust protection for these two items is adequate.
2. Flow indicator (FI-41A) and Pressure Indicator (PI-17A) are mounted in the main control console in the control room. While the environmental requirements in the FSAR differentiate between the control room and other areas of the control building for such items as temperature and humidity, it does not differentiate on dust requirements. The control room is served by a separate more effective HVAC system.
3. Foxboro, who supply both indicators, are supplying to Bechtel information on other similar hardware which has been operating for extended periods in dusty environments (e.g., cement plants). However, this information will not be available to Bechtel for 3-4 weeks.
4. It is my judgment that the actual dust conditions within the control room will not significantly alter the function or accuracy of the two indicators.

POTENTIAL FINDING REPORT
PVNGS QUALITY ASSURANCE VERIFICATION

PFR NO. 2426-PFR 056 REVISION Issue A

A. PREPARATION BY GA INITIATOR

AFFECTED ITEMS:

Motor Operated Valves, HV-689 and UV-615.

REQUIREMENT REFERENCE DOCUMENTS:

Combustion Engineering Quality Assurance of Design Procedure
(QADP) 6.0, Rev. 2.

BASIC REQUIREMENT:

Procedure 6.0 (Procurement Control) requires the "independent reviewer" to verify that all the technical and QA requirements (see checklist 7, item 3) be included in the procurement package and/or supplements thereto. Item 3 on the checklist requires that all technical requirements (on the procurement document) be completely specified in the form of drawings, specifications, codes, regulations, etc.

DESCRIPTION OF POTENTIAL FINDING:

Several supplements to P.O. 9601231 instructed the supplier to make technical changes to the procured items without being preceded by the required technical direction in the form of specification or drawing revision.

PREPARED BY: J. M. Obenschain DATE: 9-10-82

USE THE SPACE BELOW TO DOCUMENT ANY RE-REVIEW ACTION TAKEN BY INITIATOR ON THIS PFR.

SIGNATURE: _____ DATE: _____

B. REVIEW BY GA TASK LEADERPFR NO. 2426-PFR 056REVISION Issue A☐ REQUEST RE-REVIEW

BY: _____ DATE: _____

REASONS:

☒ AGREE PF IS VALID/INVALIDBY: J. Buena DATE: 9/10/82☐ DISAGREE WITH INITIATOR

BY: _____ DATE: _____

REASONS:

C., D. SEE ATTACHED SECTIONS C AND D (PAGE 3)**E. RECOMMENDATION BY FINDINGS REVIEW COMMITTEE****ADDITIONAL INFORMATION REQUIRED**

DEFINITION:

☒ ADEQUATE☐ INADEQUATE

VALIDITY:

☒ VALID☐ INVALID

CLASSIFICATION:

☒ OBSERVATION☐ FINDING**JUSTIFICATION**

CLASSIFICATION CRITERION NO. RESULTING IN "FINDING" _____

COMMENT ON "OBSERVATION" OR "FINDING" CLASSIFICATION:

*Covered by PFR 043*BY: S. L. Koutz DATE: 10/5/82 BY: _____ DATE: _____**F. GA PROJECT MANAGER**☒ ACCEPT☐ REJECTBY: [Signature] DATE: 10-6-82

C. REVIEW BY ORIGINAL DESIGN ORGANIZATION

PFR NO. 056

REVISION A

☐ AGREE ☒ DISAGREE THAT POTENTIAL FINDING IS ACCURATEBY: C. L. L. L. DATE: 9/20/82

IF THE "DISAGREE" BLOCK WAS CHECKED, USE THE SPACE BELOW TO PROVIDE INFORMATION THAT WOULD IMPROVE ACCURACY OR DEFINITION. (USE BACK FOR ADDITIONAL SPACE.)

Paragraph 5.1, QADP 6.0, states in part "The independent reviewer reviews the procurement package to verify that the order includes all of the technical and quality assurance requirements defined in Checklist No. 7." Item 3 does not preclude transmittal of verified technical information on a purchase order supplement prior to completion of revisions to affected design documents. Such transmittals are sometimes required to minimize schedular and cost impacts.

D. REVIEW BY GA INITIATOR

☐ AGREE PF IS INVALID

REASON:

BY: _____ DATE: _____

REVIEW BY GA TASK LEADER

☐ AGREE PF IS INVALID

REASON:

BY: _____ DATE: _____

General Atomic Company

QUALITY ASSURANCE DEPARTMENTPFR-056
Pg. 4Record of Long Distance Telephone CallParty: Called ☐
Calling ☐Date: 9-27-82Time: Completed 1:15 PMStarted 12:43 PMOn-line 32 minutesName G. McCoy / G. HUBACompany Combustion Engineering Inc.Location Wenonah, Conn.Telephone No: A/C 203 No. 688-1911 (x 3936)

Discussion: Mr. H. McCoy acting for C. Ferguson was advised that the 'disagree that PFR is accurate' response to PFRs 043 and 056 had been received by TPT and was to be discussed. McCoy said he was familiar with the general subject of the PFRs. He stated that this subject (technical design change on purchase order supplements) had previously been addressed internally by CE. He further stated that the freedom to make technical changes in this way (on PO supplements) was necessary and that CE's interpretation of the procedure (QADP 6.0) allowed this. He pointed out that those persons (eng. engineer, QA engineer, engineering supervisor, and independent reviewer) who review and approve POs and supplements are the same people who review/approve changes to the design documents (specs, calcs., etc.). Mr. McCoy was then advised by myself that this was not always the case. Changes to design documents ^{at} CE are processed using the DDA form. It was pointed out that this document may go to interfacing orgs whose comments if any required resolution prior to approval by the above signatories. Mr. McCoy then transferred my call to G. Huba, manager of CE Engineering QA. Mr. Huba had helped in preparation of the responses to the above PFRs. Basically Huba's contention is that item 3 on checklist 7 does not preclude transmittal of verified technical information on a purchase order supplement prior to completion of revisions to affected design documents. He did not feel that CE would be willing to enforce design document revision prior to PO revision. Our TPT interpretation of CE's QADP 6.0 is that design documents must be revised and approved before technical changes are made to the PO or supplements. It is the independent reviewer's role to assure this prior to his approval.

Record Made by J. Obenshain

Distribution:

The administrative QA requirements for processing purchase orders^(PO) and supplements are delineated in procedure 6.0 of CE's Quality Assurance of Design Manual (QADM). After preparation of a PO it must be independently reviewed. It is the independent reviewer (IR) task to review the document for compliance with applicable QA requirements. To aid the IR in his review, procedure no 6 has a checklist the reviewer uses. Item no. 3 asks "Are all of the technical requirements completely specified in the form of drawings, specifications, including revisions thereto?"

In response to this PFR, it is CE's contention that item 3 'does not preclude transmittal of verified technical information on a PO supplement prior to completion of revisions to affected design documents'. But the technical information has not been verified. To be verified, changes to design documents must go through the prescribed approval process (i.e. review/comment/resolution/approval or disapproval) with the appropriate internal and/or external interfacing orgs or groups. Approval of technical changes on POs without prior design document approval circumvents important and necessary steps within the design verification process. See the attached telecon from J Obenshain to K McCoy and K Huba on 9-27-82. Also see PFR 043 for a similar finding.

IMPACT ASSESSMENT

PFR NO. 2426-056 REVISION Issue A

AFFECTED ITEM:

Motor Operated Valves, HV-689 and UV-615

A. PREPARATION BY GA INITIATOR:

1. WHICH OF THE FIRST TWO POTENTIAL FINDING CLASSIFICATION CRITERIA APPLIES TO THIS PFR?

Don't know. 1 ☐, 2 ☐,

2. IN WHAT WAY MIGHT A SUBSTANTIAL SAFETY HAZARD BE CREATED AS A RESULT OF THE VIOLATION, DISCREPANCY OR ERROR (IF 1 OR 2 ABOVE WAS CHECKED)?:

Don't know.

3. OTHER COMMENTS:

In each case where supplements made technical changes to the PO the appropriate technical design documents were subsequently revised to cover the change.

PREPARED BY: J. Obenshain DATE: 9-29-82

B. PREPARATION BY GA TASK LEADER:

1. COMMENT ON ABOVE REPLIES: *Based on above comment that the technical documents were revised properly, I consider this a procedural violation with no substantial safety impact.*

2. DOES EVIDENCE EXIST OF MULTIPLE SIMILAR VIOLATIONS, DISCREPANCIES OR ERRORS? IF SO, LIST RELEVANT PFR NO'S:

PFR # 043

3. IF POTENTIAL FINDING CLASSIFICATION CRITERIA 3, 4, OR 5 APPLIES, STATE WHICH ONE:

NONE

3 ☐, 4 ☐, 5 ☐

4. WHAT IS YOUR JUDGEMENT OF THE LIKELIHOOD OF MULTIPLE SIMILAR VIOLATIONS, DISCREPANCIES OR ERRORS ACTUALLY CREATING A SUBSTANTIAL SAFETY HAZARD - AND OF WHAT NATURE?

Unlikely

5. OTHER COMMENTS:

None

PREPARED BY: J. D. Burrell DATE: 9/29/82

POTENTIAL FINDING REPORT
PVNGS QUALITY ASSURANCE VERIFICATION

PFR NO. 2426-PFR -057 ^{Issue} REVISION A

A. PREPARATION BY GA INITIATOR

AFFECTED ITEMS:

PVNGS pressurizer safety valve nozzle forging Dwg. C-STD 13608-002

REQUIREMENT REFERENCE DOCUMENTS:

- 1) Analytical report for Arizona Unit 1, pressurizer report, No. CEND-1336
- 2) Transmittal letter, Bechtel to CE, VO22939, dated 3/20/78
- 3) Project spec. 14273-PE-130, Rev. 3

BASIC REQUIREMENT:

Forces and moments used in analysis of pressurizer must be equal to or greater than those derived from piping analysis.

DESCRIPTION OF POTENTIAL FINDING:

The PVNGS pressurizer safety valve nozzle bending moment (Mx) due to thermal loading is given as 20,000 ft. lbs in Reference 2 and is shown as only 2,000 ft. lbs in Reference 3. As a consequence the subsequent stresses in Reference 1 are in error.

PREPARED BY: M. Kozina *M. Kozina* DATE: 9-8-82

USE THE SPACE BELOW TO DOCUMENT ANY RE-REVIEW ACTION TAKEN BY INITIATOR ON THIS PFR.

SIGNATURE: _____ DATE: _____

B. REVIEW BY GA TASK LEADER

PFR NO. 2426-PFR -057

Issue
REVISION A☐ REQUEST RE-REVIEW

BY: _____ DATE: _____

REASONS:

☒ AGREE PF IS VALID/~~INVALID~~BY: Boyer DATE: 9/10/82☐ DISAGREE WITH INITIATOR

BY: _____ DATE: _____

REASONS:

C., D. SEE ATTACHED SECTIONS C AND D (PAGE 3)

E. RECOMMENDATION BY FINDINGS REVIEW COMMITTEE

ADDITIONAL INFORMATION REQUIRED

DEFINITION: ☒ ADEQUATE ☐ INADEQUATEVALIDITY: ☒ VALID ☐ INVALIDCLASSIFICATION: ☒ OBSERVATION ☐ FINDING

JUSTIFICATION

CLASSIFICATION CRITERION NO. RESULTING IN "FINDING" _____

COMMENT ON "OBSERVATION" OR "FINDING" CLASSIFICATION:

*Errors in calculation but design
is OK. Allowables are not exceeded.*

BY: S. A. Kouz DATE: 10/1/82 BY: _____ DATE: _____

F. GA PROJECT MANAGER

☒ ACCEPT☐ REJECTBY: MA Sinner DATE: 10/1/82

C. REVIEW BY ORIGINAL DESIGN ORGANIZATION

PFR NO. 057

REVISION A

☒ AGREE☐ DISAGREE THAT POTENTIAL FINDING IS ACCURATE

BY:

Mark McCay

DATE:

9-24-82

IF THE "DISAGREE" BLOCK WAS CHECKED, USE THE SPACE BELOW TO PROVIDE INFORMATION THAT WOULD IMPROVE ACCURACY OR DEFINITION. (USE BACK FOR ADDITIONAL SPACE.)

A preliminary review of the impact of the higher moment (M_x) on the pressurizer safety valve nozzle indicates that the resultant nozzle stresses are within the allowable limits.

D. REVIEW BY GA INITIATOR

☐ AGREE PF IS INVALID

REASON:

BY:

DATE:

REVIEW BY GA TASK LEADER

☐ AGREE PF IS INVALID

REASON:

BY:

DATE:

IMPACT ASSESSMENT

PFR NO. 2426-PFR-057 REVISION Issue AAFFECTED ITEM: PVNGS Pressurizer Safety Valve Nozzle-Forging, Dwg C-STD-13608-002

A. PREPARATION BY GA INITIATOR:

1. WHICH OF THE FIRST TWO POTENTIAL FINDING CLASSIFICATION CRITERIA APPLIES TO THIS PFR?

1 ☐, 2 ☐, Neither

2. IN WHAT WAY MIGHT A SUBSTANTIAL SAFETY HAZARD BE CREATED AS A RESULT OF THE VIOLATION, DISCREPANCY OR ERROR (IF 1 OR 2 ABOVE WAS CHECKED)?:

3. OTHER COMMENTS: The discrepancy in the Pressurizer Safety Valve Nozzle bending moment resulted in a change in the design margin. However, subsequent stress analyses* indicated the pressurizer safety valve nozzle stresses did not exceed the design allowables.

** attached*PREPARED BY: M. Kozina*M. Kozina*DATE: 9-30-82

B. PREPARATION BY GA TASK LEADER:

1. COMMENT ON ABOVE REPLIES: *Concur with the Initiator's assessment that the error, when corrected, does not result in exceeding Code allowable values. No impact on design adequacy.*

2. DOES EVIDENCE EXIST OF MULTIPLE SIMILAR VIOLATIONS, DISCREPANCIES OR ERRORS? IF SO, LIST RELEVANT PFR NO'S:

N/A

3. IF POTENTIAL FINDING CLASSIFICATION CRITERIA 3, 4, OR 5 APPLIES, STATE WHICH ONE:

3 ☐, 4 ☐, 5 ☐*N/A*

4. WHAT IS YOUR JUDGEMENT OF THE LIKELIHOOD OF MULTIPLE SIMILAR VIOLATIONS, DISCREPANCIES OR ERRORS ACTUALLY CREATING A SUBSTANTIAL SAFETY HAZARD - AND OF WHAT NATURE?

Not likely

5. OTHER COMMENTS:

PREPARED BY: *[Signature]*DATE: 10/1/82

CALCULATIONS FOR PVNGS PRESSURIZED SAFETY VALVE NOZZLE			
EQUIP. NO.	PROJ. NO.	CALC. NO.	PAGE 1 OF 6
PREPARED BY M.M. KOZINA	DATE	REF. DOCUMENTS: 2426 - PFR - 057, pg. 5	
REVIEWED BY J. LARRY PICKERING	DATE 9/30/82		
APPROVED BY	DATE		

TABLE I

OLD CE DATA			NEW REVISED DATA		
$M_{x \text{ THERMAL}} = 2000 \text{ ft lb.}$			$M_{x \text{ THERMAL}} = 20,000 \text{ ft lb.}$		
FORCE (KIPS)			FORCE (KIPS)		
TOTAL MAX $\rightarrow F_x = 6.9; F_y = 7.3; F_z = 5.4$			MAX $F_x = 6.9; F_y = 7.3; F_z = 5.4$		
" MIN $\rightarrow F_x = -2.5; F_y = 4.1; F_z = .6$			MIN $F_x = -2.5; F_y = 4.1; F_z = .6$		
MOMENT (IN KIPS)			MOMENT (IN KIPS)		
M_x	M_y	M_z	M_x	M_y	M_z
MAX 122.4	190.0	420.0	+ 338.4	190.0	420.0
MIN -64.8	46.8	12.0	+ 151.2	46.8	12.0
$P_r = 9.082$	$P_r = -0.838$		$P_r = 9.082$	$P_r = -0.838$	
$P_{\phi \text{ MAX}} = 7.709$	$P_{\phi \text{ MIN}} = 1.309$		$P_{\phi \text{ MAX}} = 4.3$	$P_{\phi \text{ MIN}} = 2.91$	
$P_{\theta \text{ MAX}} = 5.40$	$P_{\theta \text{ MIN}} = .6$		$P_{\theta \text{ MAX}} = 5.4$	$P_{\theta \text{ MIN}} = 0.6$	
$T_r \text{ MAX} = 180.41$	$T_r \text{ MIN} = -70.405$		$T_r \text{ MAX} = 384.3$	$T_r \text{ MIN} = 154.86$	
$T_{\phi \text{ MAX}} = 301.89$	$T_{\phi \text{ MIN}} = 55.57$		$T_{\phi \text{ MAX}} = 154.49$	$T_{\phi \text{ MIN}} = 45.1$	
$T_{\theta \text{ MAX}} = 412.23$	$T_{\theta \text{ MIN}} = -57.315$		$T_{\theta \text{ MAX}} = 350.79$	$T_{\theta \text{ MIN}} = 4.31$	
STRESS-INTENSITY RANGE = 8.39 KSI			STRESS-INTENSITY RANGE = 6.39 KSI		
FOR LOAD FLUCTUATIONS THAT EXCEED 10^6 THE ALLOWABLE (S_2) IS READ FROM FIG. 1.9.1 OF ASME CODE 10^6 CYCLES			ASME SECT. III ALLOWABLE PER NB-3222.4 FOR CYCLIC OPERATION IS		
$S_2 = 12.8$ KSI			$S_2 = 12.8$ KSI		

COMBUSTION ENGINEERING, INC.
ENGINEERING DEPARTMENT, CHATTANOOGA, TENN.

NUMBER PR5-211 | A-454
SHEET 1A OF 536
DATE 7-25-78 BY R220
CHECK DATE 7-27-78 BY 7-27-78

CHARGE NO. 78373
DESCRIPTION SAFETY VALVE NOZZLE

PFR-057 Pg. 6

5. DETAILED ANALYSIS

C. NORMAL AND UPSET CONDITIONS

PAR. NB-3222.4 (d)(6)

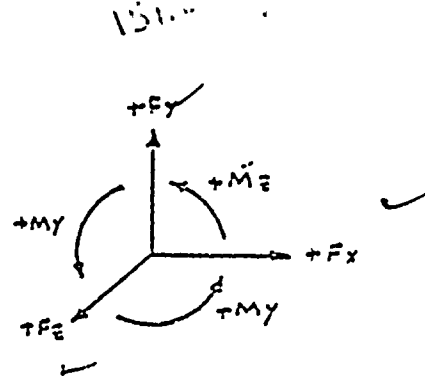
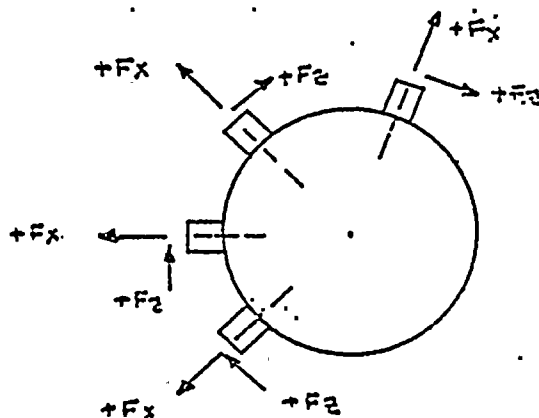
RANGE OF STRESS INTENSITY DUE TO MECHANICAL LOADS

SAFETY VALVE NOZZLE MECHANICAL LOADS IN THE NOZZLE COORDINATE SYSTEM (X, Y, Z) ARE GIVEN. BY REF: B.2.

SHOULD BE 240.00

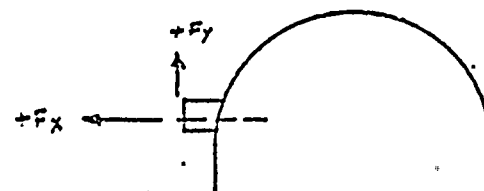
REV 5 OF PROTECT SPEC. IN KIPS

CONDITION	FORCE (KIPS)			MOMENT (IN-KIPS)		
	F _X	F _Y	F _Z	M _X	M _Y	M _Z
DEAD WT.	-0.30	4.00	0.50	4.80	-1.20	36.00
THERMAL	2.50	1.70	2.50	24.00	120.00	180.00
OBE	±4.20	±1.10	±1.90	±31.60	±60.00	±192.00
SAM	±0.50	±0.50	±0.50	±12.00	±12.00	±12.00
TOTAL	MAX.	6.90	7.30	5.40	122.40	190.00
	MIN.	-2.50	4.10	0.60	-64.80	46.80



NOTE:

SSE IS TWICE OBE.



N001-6.04-73-1

CALCULATIONS FOR PUNGS - PRESSURIZER SAFETY VALVE NOZZLE			
EQUIP. NO.	PROJ. NO. 2426	CALC. NO.	PAGE 2 OF 6
PREPARED BY M. M. KOZINA	DATE 9-29-82	REF. DOCUMENTS:	
REVIEWED BY J. L. PICKERING	DATE 9/29/82	1. CE PRESSURIZER REPORT NO. CEND-1336	
APPROVED BY	DATE		

LOAD ANALYSIS IMPACT ASSESSMENT CALCULATIONS

IN SECTION 5. C, pg. 17-23 OF REFERENCE 1,
 THE THERMAL BENDING MOMENT (M_x) WAS CORRECTED.
 THE SUBSEQUENT NEW LOADS WERE CALCULATED
 AND ARE PRESENTED BELOW;

$$\begin{aligned} P_r &= F_x \cos \theta + F_y \sin \theta & \theta &= 13.78^\circ \\ P_\phi &= -F_x \sin \theta + F_y \cos \theta & \theta &= 21.33^\circ \\ P_\theta &= F_z \end{aligned}$$

$$\begin{aligned} T_r' &= M_x \cos \theta + M_y \sin \theta \\ T_\phi' &= -M_x \sin \theta + M_y \cos \theta \\ T_\theta' &= M_z \end{aligned}$$

$$\begin{aligned} T_r &= T_r' - d_x F_z \sin \theta \\ T_\phi &= T_\phi' + d_x F_y \\ T_\theta &= T_\theta' - d_x F_z \cos \theta \end{aligned} \quad \text{(METHOD FROM pg. 21 + 22 OF REF. 1)}$$

*	P_r	P_ϕ	P_θ	T_r	T_ϕ	T_θ
MAX	9.082	4.30	5.40	384.30	154.49	350.79
MIN	-0.838	2.91	0.60	154.86	45.1	4.31

* LOADS IN KIPS & IN-KIPS

CALCULATIONS FOR PVNGS - PRESSURIZER SAFETY VALVE NOZZLE			
EQUIP. NO.	PROJ. NO. 2426	CALC. NO.	PAGE 3 OF 6
PREPARED BY M. H. KOZINA	DATE 7-29-82	REF. DOCUMENTS:	
REVIEWED BY JSC	DATE 9/29/82		
APPROVED BY	DATE		

REVISED LOADS

$$P = P_{r \max} - P_{r \min} = 9.92 \text{ KIPS}$$

$$M_t = T_{r \max} - T_{r \min} = 229.4 \text{ IN-KIPS}$$

$$V = [(P_{\theta \max} - P_{\theta \min})^2 + (P_{\phi \max} - P_{\phi \min})^2]^{\frac{1}{2}} = 4.80 \text{ #}$$

$$M = [(T_{\theta \max} - T_{\theta \min})^2 + (T_{\phi \max} - T_{\phi \min})^2]^{\frac{1}{2}} = 363.49 \text{ IN KIPS}$$

NOTE:

OLD LOADS (REF. 1 pg. 22)

$$P = 9.92 \text{ KIPS}$$

$$M_t = 250.8 \text{ IN KIPS}$$

$$V = 8.0 \text{ #KIPS}$$

$$M = 530.29 \text{ IN KIPS}$$

CALCULATIONS FOR <u>PVNGS - PRESSURIZER SAFETY VALVE NOZZLE</u>			
EQUIP. NO.	PROJ. NO.	CALC. NO.	PAGE <u>4</u> OF <u>6</u>
PREPARED BY <u>M.M. KOZINA</u>	DATE <u>9-29-82</u>	REF. DOCUMENTS:	
REVIEWED BY <u>JSP</u>	DATE <u>9/30/82</u>		
APPROVED BY	DATE		

NEW STRESS ANALYSIS USING REFUSED LOADS:

THE METHOD CALL THE Bijlard method from the WELDING RESEARCH COUNCIL, "LOCAL STRESSES IN SPHERICAL AND CYLINDRICAL SHELLS DUE TO EXTERNAL LOADINGS" IS CORRECT.

STRESS EQUATIONS FROM Bijlard method:

$$\sigma_x = \frac{N_x T}{P} \left(\frac{P}{T^2} \right) + \left(\frac{M_x}{P} \right) \frac{6P}{T^2} + \left(\frac{N_x T \sqrt{R_m T}}{M} \right) \frac{M}{T^2 \sqrt{R_m T}} + \left(\frac{M_x \sqrt{R_m T}}{M} \right) \frac{6M}{T^3 \sqrt{R_m T}}$$

$$\sigma_y = \left(\frac{N_y T}{P} \right) \frac{P}{T^2} + \left(\frac{M_y}{P} \right) \frac{6P}{T^2} + \left(\frac{N_y T \sqrt{R_m T}}{M} \right) \frac{M}{T^2 \sqrt{R_m T}} + \left(\frac{M_y \sqrt{R_m T}}{M} \right) \frac{6M}{T^3 \sqrt{R_m T}}$$

$$\tau_{xy} = \frac{M_t}{2\pi r_o^2 t} + \frac{V}{\pi r_o^2 t}$$

Bijlard parameter $U = \frac{r_o}{(R_m t)^{1/2}} = .28$

STRESS COEFFICIENTS FROM Bijlard reference SP-4, SM-4 FIGURES OF ABOVE BILJARD REFERENCE FOR RADIAL LOAD AND OVERTURNING MOMENTS ON A NOZZLE CONNECTION

$$\frac{N_x T}{P} = .15; \quad \frac{M_x}{P} = .02; \quad \frac{N_x T \sqrt{R_m T}}{M} = .25; \quad \frac{M_x \sqrt{R_m T}}{M} = .12$$

$$\frac{N_y T}{P} = .34; \quad \frac{M_y}{P} = .14; \quad \frac{N_y T \sqrt{R_m T}}{M} = .23; \quad \frac{M_y \sqrt{R_m T}}{M} = .54$$

$\therefore \sigma_x =$ $\sigma_y =$ $\tau_{xy} =$

(OVER) →

CALCULATIONS FOR <u>PUNGS SAFETY VALVE NOZZLE</u>			
EQUIP. NO.	PROJ. NO.	CALC. NO.	PAGE 5 OF 6
PREPARED BY <u>M. M. KOZINA</u>	DATE	REF. DOCUMENTS:	
REVIEWED BY <u>JEP</u>	DATE <u>9/30/82</u>		
APPROVED BY	DATE		

NEW STRESSES

$$\sigma_x = .15 \left(\frac{19.92}{4^2} \right) + .02 \left(\frac{6 \cdot 9.92}{4^2} \right) + .25 \left(\frac{363.49}{4^2 (14.24)} \right) - \frac{.12(6) \cdot 363.49}{4^2 (14.24)}$$

$$= \pm 1.71 \text{ KSI}$$

$$\sigma_y = .34 (.62) + .14 (3.72) + \frac{.23(1.6)}{4^2 (14.24)} + .54(6) \cdot 1.6$$

$$= \pm 6.28 \text{ KSI}$$

$$\tau_{xy} = \frac{229.4}{2 \cdot \pi \cdot 4^2 (1.187)} + \frac{4.8}{\pi (4) 1.187} = \pm 2.24 \text{ KSI}$$

STRESS INTENSITY RANGE

$$S = \sqrt{(\sigma_x - \sigma_y)^2 + 4 \tau_{xy}^2}$$

$$= \left[(1.71 - 6.28)^2 + 4 (2.24)^2 \right]^{1/2} = 6.39 \text{ KSI}^*$$

ALLOWABLE STRESS (S_2) IS TAKEN FROM FIG 1-9.1 SECTION IV SUBSECTION NA DN 1. FOR 200 SIGNIFICANT CYCLES, FIG 1-9.1 YIELDS AN ALLOWABLE STRESS OF 14.0 KSI. FOR 10^6 CYCLES $S_a = 12.8 \text{ KSI}$

THEREFORE, NO IMPACT EXISTS BECAUSE OF CHANGING THE THERMAL BENDING MOMENT FROM 2000 IN KIPS TO 20000 IN KIPS.

* FOR COMPARISON WITH OLD VALUES SEE TABLE I

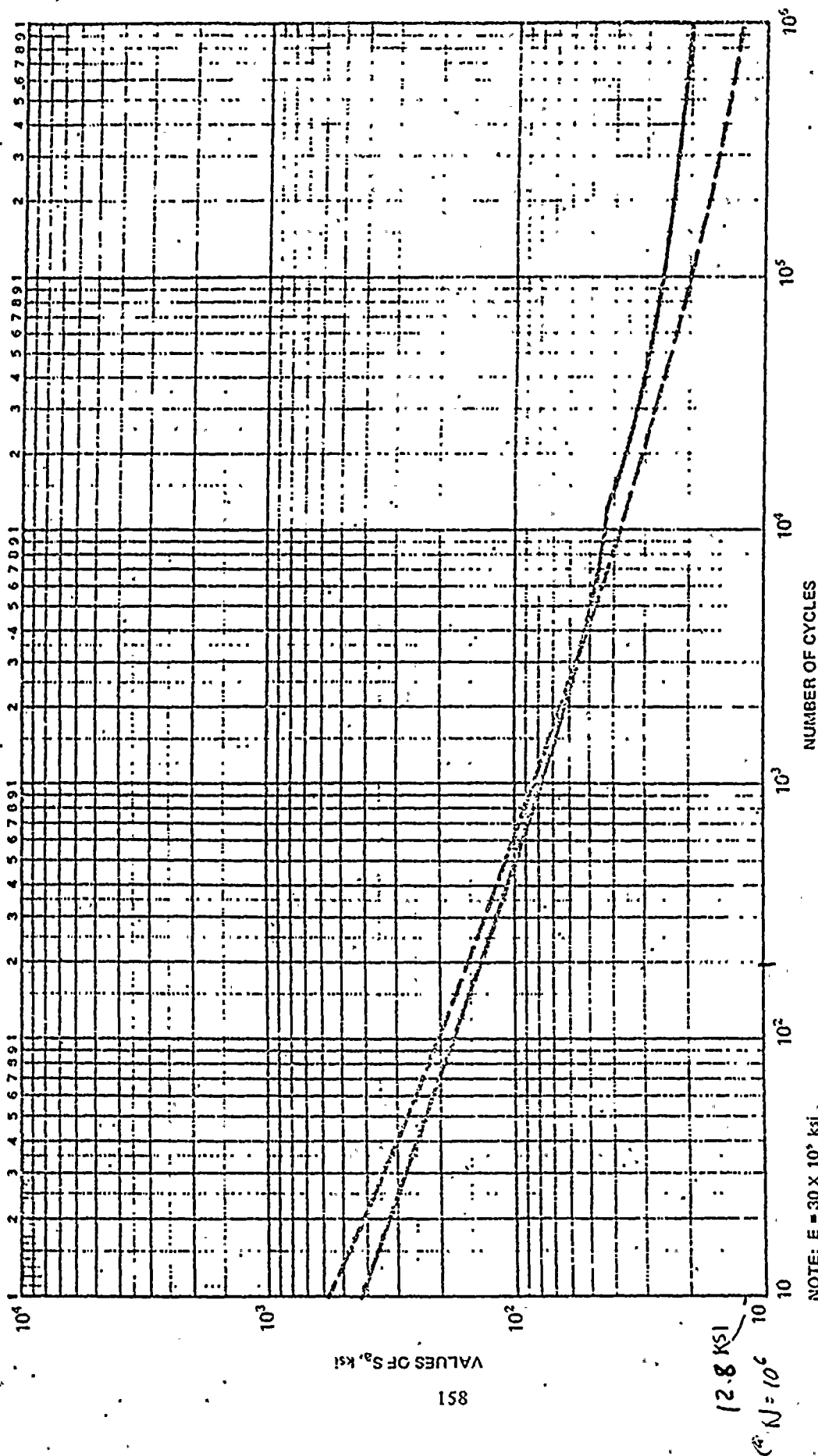


FIG. I-9.1 DESIGN FATIGUE CURVES FOR CARBON, LOW ALLOY, AND HIGH TENSILE STEELS
 (For Metal Temperatures Not Exceeding 700 F)

CALCULATIONS FOR PUNGS - PRESSURIZER SAFETY VALVE NOZZLE

EQUIP. NO.	PROJ. NO.	CALC. NO.	PAGE 1 OF 1
PREPARED BY M.M. KOZINA	DATE	REF. DOCUMENTS:	
REVIEWED BY P80	DATE 9/30/82	2426-PFR-057, pg. 12	
APPROVED BY	DATE		

THE FOLLOWING PAGES
INCLUDE THE COMBUSTION
ENGINEERING STRESS ANALYSIS
OF THE SAFETY VALVE NOZZLE
FOR THE NORMAL DESIGN CONDITIONS.
AN ERROR IN THE M_x , THERMAL
BENDING MOMENT RESULTED IN
THE FOLLOWING INCORRECT ANALYSIS.
ALSO MATH ERRORS IN THE CF
ANALYSIS RESULTED IN STRESSES
LARGER THAN THE CORRECT VALUE,
BUT WITHIN THE ALLOWABLES.

COMBUSTION ENGINEERING, INC.
ENGINEERING DEPARTMENT, CHATTANOOGA, TENN.

NUMBER PRS-211

A-43E

SHEET 21 OF 27

DATE 7-25-79 BY Q.02

CHARGE NO. 78373
DESCRIPTION SAFETY VALVE NOZZLE

CHECK DATE 7-27-78 BY Q.117A

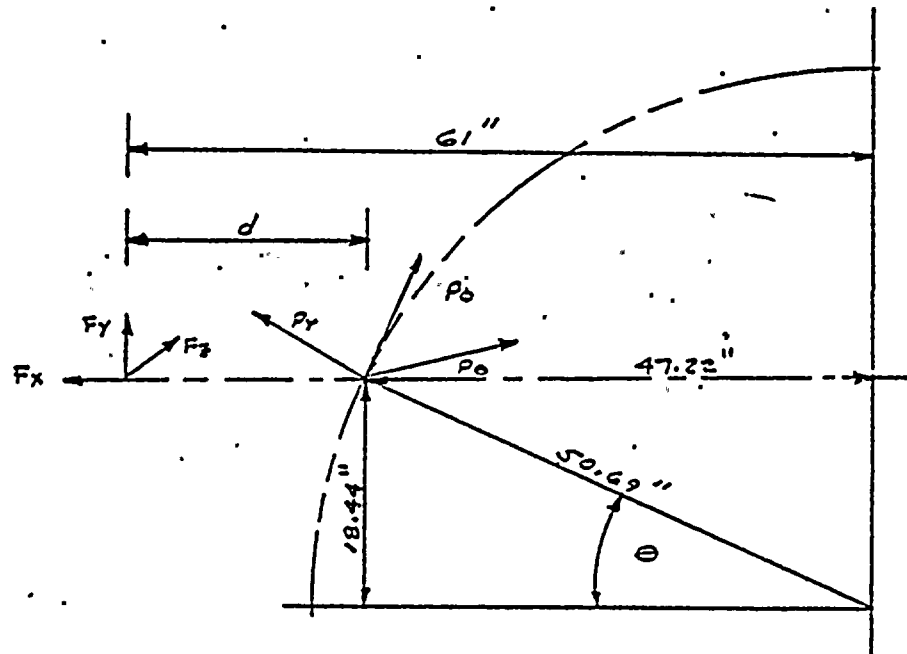
PFR-057 pg. 13

S. DETAILED ANALYSIS

C. NORMAL AND UPSET CONDITIONS

PAR. NB-3222.4 (d)(6) CONT'D

THE LOADS AND MOMENTS IN THE NOZZLE COORDINATE SYSTEM (X, Y, Z) AS GIVEN ON SHEET 15 ARE TRANSLATED AND ROTATED INTO THE HEAD COORDINATE SYSTEM (r, ϕ , θ) AS SHOWN BELOW. THE RESULTING LOADS (P_r , P_ϕ , P_θ) AND MOMENTS (T_r , T_ϕ , T_θ) ARE USED TO DEFINE THE LOADS P, V, M, MT SHOWN ON THE PRECEDING SHEET. THE EQUATIONS USED FOR THIS DEVELOPMENT ARE SHOWN ON SHEET 20.



WHERE :

$$d = 61 - \sqrt{50.69^2 - 18.44^2} = 13.78$$

$$\theta = \sin^{-1} \left(\frac{18.44}{50.69} \right) = 21.33$$

COMBUSTION ENGINEERING, INC.
ENGINEERING DEPARTMENT, CHATTANOOGA, TENN.

NUMBER PR3-211

A-437

SHEET 20 OF 27

CHARGE NO. 78373

DATE 7-25-78 BY D. J. [Signature]

DESCRIPTION SAFETY VALVE NOZZLE

CHECK DATE 7-27-78 BY [Signature]

PFR-057 pg. 14

S. DETAILED ANALYSIS

C. NORMAL AND UPSET CONDITIONS

PAR. NB. 3222.4 (d)(6) (CONT'D)

MECHANICAL LOAD STRESSES IN THE HEAD ARE
CONSERVATIVELY CALCULATED AS FOLLOWS:

DIMENSIONS:

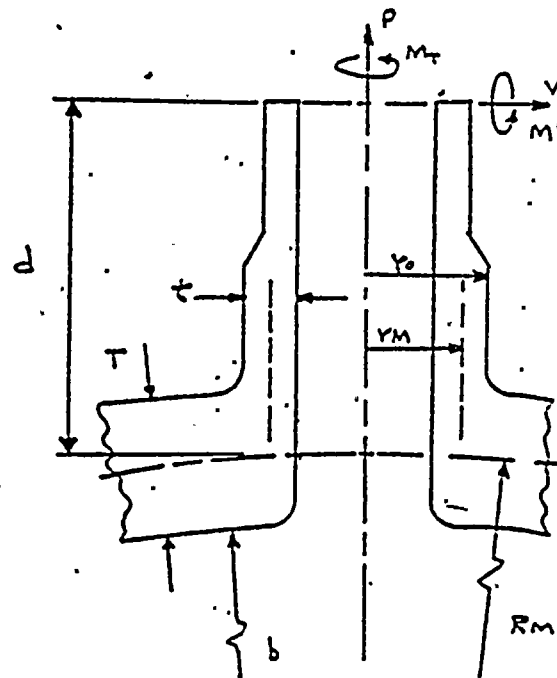
$$\begin{aligned} R_M &= 50.690'' \checkmark \\ T &= 4.000'' \checkmark \\ Y_0 &= 4.000'' \checkmark \\ Y_M &= 3.406'' \checkmark \\ t &= 1.187'' \\ d &= 10.00'' \\ b &= 48.69'' \end{aligned}$$

REF. D-2: PARAMETERS

$$\gamma = \frac{Y_M}{t} = 2.87$$

$$p = \frac{T}{t} = 3.37$$

$$\mu = \frac{Y_0}{\sqrt{R_M T}} = 0.28$$



COMBUSTION ENGINEERING, INC.

ENGINEERING DEPARTMENT, CHATTANOOGA, TENN.

CHARGE NO. 78373

DESCRIPTION SAFETY VALVE NOZZLE

NUMBER PRS-211

A-454

SHEET 17 OF 27

DATE 7-25-78 BY Reed

CHECK DATE 7-27-78 BY Smith

PFR-057 pg. 15

5. DETAILED ANALYSIS

C. NORMAL AND UPSET CONDITIONS.

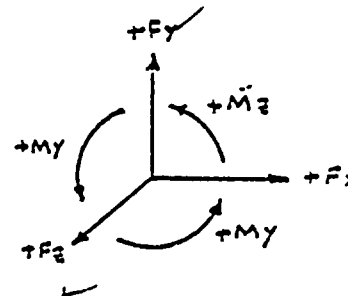
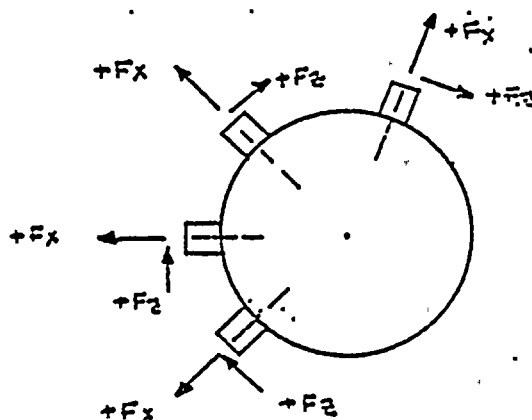
PAR. NB-3322.4 (d)(6)

RANGE OF STRESS INTENSITY DUE TO MECHANICAL LOADS

SAFETY VALVE NOZZLE MECHANICAL LOADS IN THE NOZZLE COORDINATE SYSTEM (X, Y, Z) ARE GIVEN BY REF. B.2.

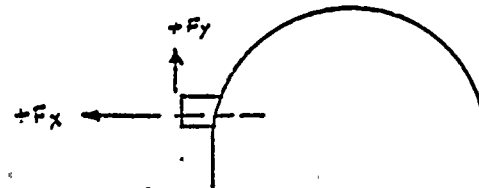
REV 5 OF PROJECT SPEC. IN KIPS

CONDITION	FORCE (KIPS)			MOMENT (IN-KIPS)			OR
	F _X	F _Y	F _Z	M _X	M _Y	M _Z	
DEAD WT.	-0.30	4.00	0.50	4.80	-1.20	36.00	
THERMAL	2.50	1.70	2.50	24.00	120.00	180.00	
OBE	±4.20	±1.10	±1.90	±81.60	±60.00	±192.00	
SAM	±0.50	±0.50	±0.50	±12.00	±12.00	±12.00	
TOTAL	MAX.	6.90	7.30	5.40	122.40	190.00	420.00
	MIN.	-2.50	4.10	0.60	-64.80	-46.80	12.00



NOTE:

SSE IS TWICE OBE.



N001-6.04-73-1

379

5. DETAILED ANALYSISC. NORMAL AND UPSET CONDITIONS

PF2-057

Pg. 16

PAR. NO-3222.4 (d) (6) CONT'D

$$P_r = F_x \cos \theta + F_y \sin \theta$$

$$P_\phi = -F_x \sin \theta + F_y \cos \theta$$

$$P_\theta = F_z$$

$$T_r' = M_x \cos \theta + M_y \sin \theta$$

$$T_\phi' = -M_x \sin \theta + M_y \cos \theta$$

$$T_\theta' = M_z$$

$$T_r = T_r' - d \cdot F_z \sin \theta$$

$$T_\theta = T_\theta' - d \cdot F_z \cos \theta$$

$$T_\phi = T_\phi' + d \cdot F_y$$

FROM PG. 22 OF REF. 1, THE OLD LOADS ARE:

	P_r	P_ϕ	P_θ	T_r	T_ϕ	T_θ
MAX.	9.082	7.709	5.40	180.410	301.894	412.298
MIN	-0.838	1.309	0.60	-70.405	55.570	-57.315

$$P = P_{r \text{ max}} - P_{r \text{ min}} = 9.92$$

$$M_t = T_{r \text{ max}} - T_{r \text{ min}} = 250.815$$

$$V = \left[(P_{\theta \text{ max}} - P_{\theta \text{ min}})^2 + (P_{\phi \text{ max}} - P_{\phi \text{ min}})^2 \right]^{\frac{1}{2}} = 8.0$$

$$M = \left[(T_{\theta \text{ max}} - T_{\theta \text{ min}})^2 + (T_{\phi \text{ max}} - T_{\phi \text{ min}})^2 \right]^{\frac{1}{2}} = 530.294^*$$

* MATH ERROR \Rightarrow M SHOULD HAVE BEEN 363.4 IN KIPS

COMBUSTION ENGINEERING, INC.
ENGINEERING DEPARTMENT, CHATTANOOGA, TENN.

CHARGE NO. 78373
DESCRIPTION SAFETY VALVE NOZZLE

NUMBER PRS-211 A-440
SHEET 23 OF 27
DATE 7-25-79 BY Doc
CHECK DATE 7-27-79 BY TRU
PFR-057 pg. 17

5. DETAILED ANALYSIS

6. NORMAL AND UPSET CONDITIONS

PAR. NB.3222.4 (d)(6) CONT'D

STRESS EQUATIONS FROM REF. D.2

$$\sigma_x = \left(\frac{N_x T}{P}\right) \frac{P}{T^2} + \left(\frac{M_x}{P}\right) \frac{6P}{T^2} + \left(\frac{N_x T \sqrt{R_m T}}{M}\right) \frac{M}{T^2 \sqrt{R_m T}} + \left(\frac{M_x \sqrt{R_m T}}{M}\right) \frac{6M}{T^2 \sqrt{R_m T}}$$

$$\sigma_y = \left(\frac{N_y T}{P}\right) \frac{P}{T^2} + \left(\frac{M_y}{P}\right) \frac{6P}{T^2} + \left(\frac{N_y T \sqrt{R_m T}}{M}\right) \frac{M}{T^2 \sqrt{R_m T}} + \left(\frac{M_y \sqrt{R_m T}}{M}\right) \frac{6M}{T^2 \sqrt{R_m T}}$$

$$\tau_{xy} = \frac{M_T}{2\pi r_o^2 t} + \frac{V}{\pi r_o^2 t}$$

STRESS COEFFICIENTS FROM FIG. SP-4 AND SM-4 OF REF. D.2

$$\frac{N_x T}{P} = 0.15; \quad \frac{M_x}{P} = 0.02; \quad \frac{N_x T \sqrt{R_m T}}{M} = 0.23; \quad \frac{M_x \sqrt{R_m T}}{M} = 0.11;$$

$$\frac{N_y T}{P} = 0.34; \quad \frac{M_y}{P} = 0.14; \quad \frac{N_y T \sqrt{R_m T}}{M} = 0.23; \quad \frac{M_y \sqrt{R_m T}}{M} = 0.54$$

SO, THE MAXIMUM STRESSES ARE

$$\sigma_x = \pm 2.29 \text{ KSI} \quad \sigma_y = \pm 8.81 \text{ KSI} \quad \tau_{xy} = \pm 2.64 \text{ KSI}$$

THE STRESS INTENSITY RANGE

$$S = \sqrt{(\sigma_x - \sigma_y)^2 + 4\tau_{xy}^2} = 8.39 \text{ KSI} < S_a = 12.9 \text{ KSI}$$

SO THERE ARE 200 SIGNIFICANT CYCLES AND FROM
FIG I-9.1 OF REF. A.1, $S_a = 140 \text{ KSI}$ SINCE

$$S = 8.39 \text{ KSI} < S_a = 140 \text{ KSI}$$

THE CRITERION IS MET IN THE HEAD.

POTENTIAL FINDING REPORT
PVNGS QUALITY ASSURANCE VERIFICATION

PFR NO. 2426-PFR -058 REVISION _____ Issue A

PREPARATION BY GA INITIATOR

AFFECTED ITEMS:

Downcomer and Auxiliary Feedwater Piping Line from Penetration U76 to Steam Generator.

REQUIREMENT REFERENCE DOCUMENTS:

1. ASME Boiler and Pressure Vessel Code, Div. 1, Sec. III, Subsection NC, 1974, and Code Case 1606.

BASIC REQUIREMENT:

The stress allowable specified in Reference 1 has to be met for faulted condition loading combination for the auxiliary feedwater line.

DESCRIPTION OF POTENTIAL FINDING:

Attachment 1 shows the stress summary of the various sections of the piping for the water hammer analysis. At Node 140E, the stress allowables are exceeded and a negative design margin exists.

PREPARED BY: M. Krishn DATE: 9/13/82

USE THE SPACE BELOW TO DOCUMENT ANY RE-REVIEW ACTION TAKEN BY INITIATOR ON THIS PFR.

SIGNATURE: _____ DATE: _____

B. REVIEW BY GA TASK LEADER

PFR NO. 2426-PFR -058

REVISION ^{Issue} A☐ REQUEST RE-REVIEW
REASONS:

BY: _____ DATE: _____

☒ AGREE PFR IS VALID/INVALID
☐ DISAGREE WITH INITIATOR
REASONS:BY: [Signature] DATE: 9/15/82
BY: _____ DATE: _____**C., D. SEE ATTACHED SECTIONS C AND D (PAGE 3)****E. RECOMMENDATION BY FINDINGS REVIEW COMMITTEE****ADDITIONAL INFORMATION REQUIRED**DEFINITION: ☒ ADEQUATE ☐ INADEQUATE
VALIDITY: ☐ VALID ☒ INVALID
CLASSIFICATION: ☐ OBSERVATION ☐ FINDING**JUSTIFICATION**

CLASSIFICATION CRITERION NO. RESULTING IN "FINDING" _____

COMMENT ON "OBSERVATION" OR "FINDING" CLASSIFICATION:

BY: [Signature] DATE: 10/1/82 BY: _____ DATE: _____**F. GA PROJECT MANAGER**☒ ACCEPT
☐ REJECTBY: [Signature] DATE: 10/1/82

C. REVIEW BY ORIGINAL DESIGN ORGANIZATION

PFR NO. 058

REVISION A

☐ AGREE ☒ DISAGREE THAT POTENTIAL FINDING IS ACCURATE

BY: Reel and M. J. J. J. DATE: 9/22/82

IF THE "DISAGREE" BLOCK WAS CHECKED, USE THE SPACE BELOW TO PROVIDE INFORMATION THAT WOULD IMPROVE ACCURACY OR DEFINITION. (USE BACK FOR ADDITIONAL SPACE.)

As stipulated at the time of original document submittal, some analyses for Pipe Stress and Support calculations were in the process of finalization. Calculation 13-MC-22-533A was unchecked as indicated in Attachment 1 of this PFR. Subsequently, errors were found in the determination of stresses. These were corrected and the checked stress summary is enclosed. The resulting stress levels are below the allowable stress of $2.4 S_h$ for all data points.

D. REVIEW BY GA INITIATOR

☒ AGREE PF IS INVALID

REASON: BECHTEL HAS SENT THE CHECKED VERSION OF CALC. # 22-533A WHICH IS ATTACHED IN THIS VERSION THE CALCULATED STRESSES MEET THE ASME CODE STRESS ALLOWABLES. IT SHOULD BE NOTED THAT THE ERROR WAS NOTICED ALSO BY THE PERSON WHO CHECKED THE ANALYSIS (ON 8/24/82). THE INCORRECT RESULT OCCURRED AS A RESULT OF USING THE WRONG LOAD COMBINATION AND ERRONEOUS STRESS INTENSIFICATION FACTORS. I CONCUR WITH THE REVIEW COMMENTS MADE BY ODD.

BY: M. J. J. J. DATE: 9/30/82

REVIEW BY GA TASK LEADER

☒ AGREE PF IS INVALID

REASON: Concur with the Initiator's review comments. Recommend that this PFR be invalidated.

BY: J. J. J. J. DATE: 10/1/82



ATTACHMENT 1 CALCULATION SHEET

CALC. NO. ZZ-533A

Pg. 4

UN0013-01

SIGNATURE

Y. C. Man

DATE

6/29/82

CHECKED

DATE

PROJECT

ANPP - PVNGS

JOB NO.

SUBJECT

MAIN STEAM FEED WATER LINES

SHEET

OF

SHEETS

TABLE STRESS SUMMARY - STRUCTURAL INTEGRITY IN FAULTED CONDITION CHECK

NODE POINT	M_A , D.W.	M_A , SSE	M_A , WATER HAMMER	M_{RA} , (IN-LB)	.75SIF, .75 λ	Z, (IN ³)	$\frac{P_{max} D_o}{2 t n}$	$\frac{P_{max} D_o}{2 t n} + .75 \lambda \frac{M_{RA}}{Z}$, (PSI)	2.4 Sh, (PSI)
5	1400	7502	2909	77,006	1.	13.0	4217	11,756	36,000
10B	1384	7506	2902	97,987	2.373	↑	↑	22,103	↑
10E	341	7002	2187	88,122	2.373	↓	↓	20,303	↓
15	325	6242	1980	78,679	1.5	↓	4744	13,822	↓
40	565	5028	1842	64,614	1.	25.64	↑	7,267	↑
45	1384	9870	4378	130,629	1.	↑	↑	9,839	↑
50B	1365	5374	1822	70,036	2.552	↑	↑	11,715	↑
50E	841	4294	1348	54,942	2.552	↑	↑	10,213	↑
60	1113	3114	2242	47,944	1.	↑	↑	6,614	↑
70B	1512	8136	3636	108,466	1.	↑	↑	8,774	↑
70E	1437	9198	3975	121,472	1	↑	↑	9,482	↑
80	389	6662	3666	91,368	1.	↑	↑	8,308	↑
90	3643	8570	3888	121,095	1.	↑	↑	9,467	↑
100	468	4690	1735	60,008	1.	↑	↑	7,084	↑
110B	617	3220	2222	47,527	2.552	↑	↑	9,475	↑
110E	567	3506	2913	55,121	2.552	↑	↑	10,230	↑
120	1054	11300	21552	292,290	1.	↑	↑	16,144	↑
130	3157	22264	43517	587,802	1.	↑	↑	27,669	↑
140B	591	7012	12894	176,270	2.552	↑	↑	22,287	↑
140E	747	13260	24482	324,228	2.552	↑	↑	38,010	↑
150	767	13928	25943	353,464	1.	↑	↑	18,530	↑
160	223	6154	1518.7	196,656	1	↑	↑	12,814	↑
170	2726	15210	11932	234,276	1.	↑	↑	13,881	↑
180B	2	3046	3017	65,009	2.552	↑	↑	10,219	↑
180E	5	2770	4204	68,044	2.552	↑	↑	11,517	↑



CALCULATION SHEET

PFR-058, pg 5
CALC. NO. ZZ-533A

LMO 0313 8-73

SIGNATURE Y. C. Ngar DATE 6/29/82CHECKED ckw DATE 8/24/82JOB NO. 10407PROJECT ANPP - PV N45 SHEET 16 OF 27 SHEETS
SUBJECT DRAINAGE & DUX. FEEDWATER WATER
HAMMER ANALYSIS - INSIDE CMT

TABLE 1 STRESS SUMMARY FOR STRUCTURAL INTEGRITY - SERVICE LEVEL D

NODE POINT	M_A (FT-LBS) D.W.	M_A (FT-LBS) SSE	M_A (FT-LBS) WATER HAMMER	M_{RA} (IN-LBS)	.75SIF, .75 λ	Z, (IN ³)	$\frac{P_{max} D_o}{4t_n}$	$\frac{P_{max} D_o}{4t_n} + .75 \lambda \frac{M_{RA}}{Z}$ (PSI)	2.4 Sh, (PSI)
5	1400	7502	2909	113355	1.	13.0	4217	12937	36,000
10B	1384	7506	2902	113178	1.232	↑	↑	14943	
10E	341	7002	2187	92119	1.232	↓	↓	12947	
15	325	6242	1980	82482	1.5	↓	4744	14261	
40	565	5028	1842	71037	1.	25.64	↑	7515	
45	1384	9870	4378	146177	1.	↑		10445	
50B	1365	5374	1822	84474	1.325			9109	
50E	841	4294	1348	64099	1.325			8056	
60	1113	3114	2242	59382	1.			7060	
70B	1512	8136	3636	125082	1.			9622	
70E	1437	9198	3975	137486	1.			10106	
80	389	6662	3666	95917	1.			8485	
90	3643	8570	3888	156645	1.			10853	
100	468	4690	1735	65624	1.			7303	
110B	617	3220	2222	54351	1.325			7553	
110E	567	3506	2913	61503	1.325			7922	
120	1054	11300	21552	304665	1.			16626	
130	3157	22264	43517	624464	1.			29099	
140B	591	7012	12894	183220	1.325			14212	
140E	747	13260	24482	343072	1.325			22473	
150	767	13928	25943	362548	1.			18884	
160	223	6154	15187	199314	1.			12518	
170	2726	15210	11932	264693	1.			15067	
180B	244	3046	3417	57859	1.325			7734	
180E	516	3770	4204	73954	1.325			8566	



CALCULATION SHEET

PFR-058, Pt 6, ZZ-533A
CALC. NO.

LMO 0513 8-73

SIGNATURE

y.c. Ma

DATE 6/29/82

CHECKED

Date 8/24/82

PROJECT

ANPP-PVNGS

JOB NO.

10407-002

SUBJECT DOWNCOMER & AUX FEEDWATER WATER
HEAVY METAL ANALYSIS - INSIDE CNT

SHEET

17 OF 27

SHEETS

TABLE 1 STRESS SUMMARY FOR STRUCTURAL INTEGRITY - SERVICE LEVEL D
(CONTINUED)

NODE POINT	M_A , D.W. (FT-LBS)	M_A , SSE (FT-LBS)	M_A , WATER HAMMER (FT-LBS)	M_{RA} , (IN-LB)	.75 SIF, .75 λ	Z , (IN)	$\frac{P_{max} D_o}{4 t_n}$	$\frac{P_{max} D_o}{4 t_n} + .75 \lambda \frac{M_{RA}}{Z}$ (PSI)	$2.4 S_h$, (PSI)
190	1434	12204	12008	222660	1	25.64	4744	13428	36000
200	617	16466	14147	267908	1			15193	
210	2147	14758	13451	265382	1			15094	
220B	94	5638	13716	179083	1.325			13998	
220E	158	5246	5313	91494	1.325			9472	
230	344	19156	38651	521779	1			25094	
231	299	19260	43207	571252	1			27024	
240	89	8340	18723	247026	1			14378	
250	280	4532	6813	101552	1			8705	
260	109	3102	3279	55473	1			6908	
270	462	3240	3998	67296	1			7369	
280B	714	7288	11489	171835	1.325			13624	
280E	1184	6506	9629	153659	1.325			12685	
285	2711	4692	5900	122991	1			9541	
290	1805	2922	3316	74697	1			7657	
300	642	4000	5905	93291	1.016			8441	
310	497	4132	6567	99070	1.425			10250	
320	762	5228	8653	130461	1.425			11995	
325B	660	5618	9138	136642	1.325			11805	
325E	272	5902	9477	137239	1.325			11836	
330B	457	5810	9363	137714	1.325			11861	
330E	902	7106	11513	173177	1.325			13692	
340	1329	7584	12330	189656	1			12141	
350	443	1812	2559	42943	1.20			6754	38400
352B	450	1730	2618	43056	1.005			6432	38400



CALCULATION SHEET

PFR-058, PG 7

CALC. NO. 22-533A

SIGNATURE

y. c. Ma

DATE

6/29/82

CHECKED

dhu

DATE 8/24/82

PROJECT

ANPP-PVNGS

JOB NO.

10407

SUBJECT

DRAINAGE & AUX. FEEDWATER WATER
HAMMER ANALYSIS - INSIDE CWT

SHEET

18 OF 27

SHEETS

TABLE 1 STRESS SUMMARY FOR STRUCTURAL INTEGRITY - SERVICE LEVEL D
(CONTINUED)

NODE POINT	M_{Δ} , D.W. (FT-LBS)	M_{Δ} , SSE (FT-LBS)	M_{Δ} , WATER HAMMER (FT-LBS)	M_{RA} , (IN-LB)	.75 SIF, .75 Δ	Z , (in)	$\frac{P_{max} D_o}{4t_n}$	$\frac{P_{max} D_o}{4t_n} + .75 \Delta \frac{M_{RA}}{Z}$ (PSI)	$2.4 S_{\Delta}$, (PSI)
352E	212	1264	2123	32194	1.005	16.13	4200	6206	38400
355B	230	4260	7086	101975	1.005			10554	
355E	385	5956	9840	142646	1.005			13088	
370	265	2788	4426	65951	1.			8289	
380B	401	4344	7221	105935	1.005			10800	
380E	200	3388	5490	79815	1.005			9173	
390	111	3482	5430	78738	1.			9081	
400B	308	4490	7038	103875	1.005			10672	
400E	720	5754	9099	137828	1.005			12788	
405	783	5700	9037	137609	1.			12731	
410	719	5878	9385	141514	1.005			13017	
420	670	8992	14765	215491	1.005			17626	
430	678	10328	17016	246997	1.			19513	
COMPUTER FILE	NC110 3/9/81	NC830 4/3/82	NC509 4/1/82						

NOTE: THE RESULTANT MOMENT IS DEFINED AS

$$M_{RA} = M_{\Delta D.W.} + \sqrt{M_{\Delta SSE}^2 + M_{\Delta W.H.}^2}$$



POTENTIAL FINDING REPORT
PVNGS QUALITY ASSURANCE VERIFICATION

PFR NO. 2426-PFR -059 REVISION Issue A

A. PREPARATION BY GA INITIATOR

AFFECTED ITEMS:

Auxiliary Feedwater Pump Outlet Pressure Measurement (PT17, PI-17A)

REQUIREMENT REFERENCE DOCUMENTS:

FSAR Vol. VIII, Sect. 7.5. Instruments and Controls

BASIC REQUIREMENT:

Table 7.5-1 of the FSAR gives a displayed accuracy requirement of $\pm 1.5\%$ for the Auxiliary Feedwater Pump Discharge Pressure.

DESCRIPTION OF POTENTIAL FINDING:

For PT-17 Bechtel Spec. No. 13-JM-311 (para. 4.5) gives an accuracy requirement of $\pm 0.25\%$ (including the combined effects of repeatability, linearity, hysteresis and dead band).

For PI-17A, Bechtel Spec. No. 12-JM-111 (Data sht. 13-J-070-040) has a guaranteed accuracy requirement of $\pm 1.5\%$.

Thus the combination of the accuracies for the two instruments is slightly outside the FSAR requirements.

PREPARED BY: Alan Middleton DATE: 9/14/82

USE THE SPACE BELOW TO DOCUMENT ANY RE-REVIEW ACTION TAKEN BY INITIATOR ON THIS PFR.

SIGNATURE: _____ DATE: _____

B. REVIEW BY GA TASK LEADER

PFR NO. 2426-PFR -059

REVISION ^{Issue} A☐ REQUEST RE-REVIEW

BY: _____ DATE: _____

REASONS:

☒ AGREE PF IS VALID/~~INVALID~~BY: FSR DATE: 9/14/82☐ DISAGREE WITH INITIATOR

BY: _____ DATE: _____

REASONS:

C., D. SEE ATTACHED SECTIONS C AND D (PAGE 3)

E. RECOMMENDATION BY FINDINGS REVIEW COMMITTEE

DEFINITION: ☒ ADEQUATE ☐ INADEQUATEVALIDITY: ☒ VALID ☐ INVALIDCLASSIFICATION: ☒ OBSERVATION ☐ FINDING

JUSTIFICATION

CLASSIFICATION CRITERION NO. RESULTING IN "FINDING" _____

COMMENT ON "OBSERVATION" OR "FINDING" CLASSIFICATION:

*minor inconsistency between FSAR
+ Spec but hardware is OK*

ADDITIONAL INFORMATION REQUIRED

BY: S. L. Koutz DATE: 10/1/82

BY: _____ DATE: _____

F. GA PROJECT MANAGER

☒ ACCEPT☐ REJECTBY: [Signature] DATE: 10/4/82

C. REVIEW BY ORIGINAL DESIGN ORGANIZATION

PFR NO. 59REVISION A☐ AGREE ☒ DISAGREE THAT POTENTIAL FINDING IS ACCURATEBY: K. StengerDATE: 9-22-82

IF THE "DISAGREE" BLOCK WAS CHECKED, USE THE SPACE BELOW TO PROVIDE INFORMATION THAT WOULD IMPROVE ACCURACY OR DEFINITION. (USE BACK FOR ADDITIONAL SPACE.)

Data sheet 13-J-070-040, a procurement document, contains the requested accuracy at the time of procurement. The guaranteed accuracy of the instrument (per the vendor's manual) is $\pm 0.5\%$

D. REVIEW BY GA INITIATOR

☐ AGREE PF IS INVALID

REASON:

BY: _____

DATE: _____

REVIEW BY GA TASK LEADER

☐ AGREE PF IS INVALID

REASON:

BY: _____

DATE: _____

INTRODUCTION

GENERAL

The 270IS/ID station (Figure 1-1) uses a gas discharge display with bar graph format for the display of two input values (270ID) or one input value and optional high-low alarms (270IS).

The station can be mounted in a panel cutout by the use of brackets, or placed in 202S Series shelves. Alarm options (270IS only) provide alarm and alarm trip-point display with high and low alarm trip-point adjustment. Input power options allow the station to be used with various line voltages.

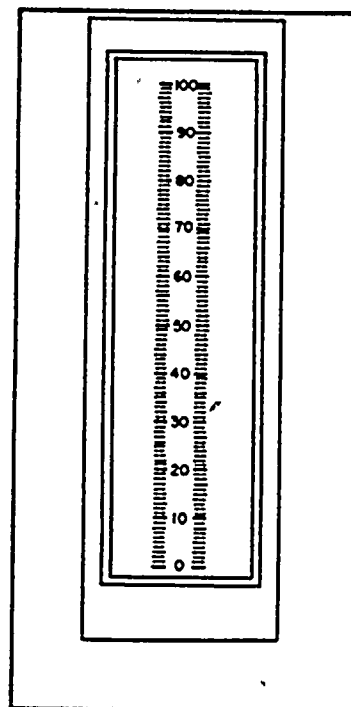


Figure 1-1. 270IS/ID Stations

GENERAL SPECIFICATIONS

Input 1 and 2:	0 to +10 V dc into 100 kilohms minimum
Display Accuracy:	±0.5% of span
Power Supply Input	
Option A:	102 to 132 V ac, 47 to 63 Hz
Option B:	187 to 242 V ac, 47 to 63 Hz
Option C:	204 to 264 V ac, 47 to 63 Hz
Option F:	20.4 to 26.4 V ac, 47 to 63 Hz
Option G:	40.8 to 52.8 V ac, 47 to 63 Hz

FROM: ALAN MIDLETON LOCATION: 14/135 DATE: 9/28/62

TO: _____ LOCATION: _____ DATE: _____

TELEPHONE COMMUNICATION RECORD

(PLEASE HAND LETTER LEGIBLY IN BLACK OR RED INK)

Attachment to
2426-PFR-059,
pg. 5

CALL INITIATED BY: ALAN MIDLETON AT GAC ☒ OTHER: _____

CALL RECEIVED BY: JIM MAHLMEISTER AT GAC ☐ OTHER: BECHTEL

OTHER PARTICIPANTS: _____

DATE: 9/28/62 TIME: 10:30 PROGRAM NAME: PVNGS PROGRAM NUMBER: 2426.600.200

SUBJECT: PFR-059 INSTR. ACCURACY

SUMMARY: ① I POINTED OUT TO MAHLMEISTER THAT
ALTHOUGH THE ^{TWO} INSTRUMENTS INSTALLED ON UNIT 1
MEET FSAR ^{ACCURACY} REQUIREMENTS THERE WAS A POTENTIAL
PROBLEM THAT EQUIPMENT PROCURED FOR
UNITS 2 & 3 OR SPARES ^{COULD} ~~MEET~~ BE PURCHASED
TO EXISTING ^{INSTR.} SPECS. THIS WOULD RESULT IN
INSTR. ACCURACIES OUTSIDE THE FSAR REQ. AGAIN.
^{JIM} MAHLMEISTER AGREED THAT IT WAS POSSIBLE, BUT
HE FELT IT WAS MORE PROBABLE THAT
FUTURE PROCUREMENTS WOULD BUY HARDWARE
IDENTICAL TO THE INSTALLED ITEM.

ACTION ITEMS:	Date Required	Person Responsible

DISTRIBUTION: _____

File No.: _____

IMPACT ASSESSMENT

PFR NO. 2426-PFR-059 ^{Issue} REVISION A

AFFECTED ITEM:

Auxiliary Feedwater Pump Outlet Pressure Measurement (PT17 & PI17A)

A. PREPARATION BY GA INITIATOR:

1. WHICH OF THE FIRST TWO POTENTIAL FINDING CLASSIFICATION CRITERIA APPLIES TO THIS PFR?

1 ☐, 2 ☐,

2. IN WHAT WAY MIGHT A SUBSTANTIAL SAFETY HAZARD BE CREATED AS A RESULT OF THE VIOLATION, DISCREPANCY OR ERROR (IF 1 OR 2 ABOVE WAS CHECKED)?:

3. OTHER COMMENTS:

See attached page 2.

PREPARED BY: Alan Middleton *Alan Middleton* DATE: 9/29/82

B. PREPARATION BY GA TASK LEADER:

1. COMMENT ON ABOVE REPLIES: *Concur with the Initiator's assessment that there is no impact on design adequacy.*

2. DOES EVIDENCE EXIST OF MULTIPLE SIMILAR VIOLATIONS, DISCREPANCIES OR ERRORS? IF SO, LIST RELEVANT PFR NO'S:

N/A

3. IF POTENTIAL FINDING CLASSIFICATION CRITERIA 3, 4, OR 5 APPLIES, STATE WHICH ONE:

3 ☐, 4 ☐, 5 ☐

N/A

4. WHAT IS YOUR JUDGEMENT OF THE LIKELIHOOD OF MULTIPLE SIMILAR VIOLATIONS, DISCREPANCIES OR ERRORS ACTUALLY CREATING A SUBSTANTIAL SAFETY HAZARD - AND OF WHAT NATURE?

Not likely

5. OTHER COMMENTS:

PREPARED BY:

F. Soper

DATE:

9/30/82

Page 2 to Impact Assessment - PFR-059 - ^{Issue}Rev. A

3. Other Comments:

1. Actual accuracy of the two instruments installed is within FSAR requirements.
2. There is still a potential problem that on replacement hardware; spare parts or equipment procured for Units 2 & 3; that those items will be purchased to the presently existing spec. sheets (again resulting in the combined instrument accuracy being outside FSAR requirements).
3. It is unlikely that an additional error of $\pm 1/4\%$ on the Auxiliary Feedwater Pump outlet pressure measurement would result in a substantial safety hazard.
4. This is essentially a procedural problem and Bechtel should resolve it by revising one or both instrument spec. sheets.



POTENTIAL FINDING REPORT
PVNGS QUALITY ASSURANCE VERIFICATION

PFR NO. 2426-PFR 060 REVISION Issue A

A. PREPARATION BY GA INITIATOR

AFFECTED ITEMS:

As-Built Log, Units 1, 2, and 3, August 26, 1982 issue.

REQUIREMENT REFERENCE DOCUMENTS:

Bechtel IP-4.33, Rev. 4, dated 5/8/80, Para. 2.0, 4th sentence.

BASIC REQUIREMENT:

The As-Built Log is a compilation of selected non-incorporated cross references which define as-built conditions of each unit and which are not included in other permanent logs or documents.

DESCRIPTION OF POTENTIAL FINDING:

The following FCRs have DCN numbers (i.e., to be incorporated in drawing by revision), however, these FCRs are incorrectly listed in the As-Built Log, dated August 26, 1982.

FCR 17881E to Dwg. 13-E-ZAC-033 - made into DCN 12
FCR 18934E to Dwg. 13-E-ZAC-006 - made into DCN 30
FCR 19130E to Dwg. 13-E-ZAC-006 - made into DCN 28

PREPARED BY: W. P. Malay W.P. Malay DATE: 9/10/82

USE THE SPACE BELOW TO DOCUMENT ANY RE-REVIEW ACTION TAKEN BY INITIATOR ON THIS PFR.

SIGNATURE: _____ DATE: _____

B. REVIEW BY GA TASK LEADER

PFR NO. 2426-PFR 060

REVISION Issue A☐ REQUEST RE-REVIEW

BY: _____ DATE: _____

REASONS:

☒ AGREE PF IS VALID/~~INVALID~~BY: J. Burd DATE: 9/10/92☐ DISAGREE WITH INITIATOR

BY: _____ DATE: _____

REASONS:

C., D. SEE ATTACHED SECTIONS C AND D (PAGE 3)

E. RECOMMENDATION BY FINDINGS REVIEW COMMITTEE**ADDITIONAL INFORMATION REQUIRED**DEFINITION: ☒ ADEQUATE ☐ INADEQUATEVALIDITY: ☐ VALID ☒ INVALIDCLASSIFICATION: ☐ OBSERVATION ☐ FINDING**JUSTIFICATION**

CLASSIFICATION CRITERION NO. RESULTING IN "FINDING" _____

COMMENT ON "OBSERVATION" OR "FINDING" CLASSIFICATION:

BY: J. L. Kouty DATE: 9/29/82 BY: _____ DATE: _____**F. GA PROJECT MANAGER**☒ ACCEPT☐ REJECTBY: [Signature] DATE: 9/30/82

C. REVIEW BY ORIGINAL DESIGN ORGANIZATION

PFR NO. 060

REVISION A

☐ AGREE ☒ DISAGREE THAT POTENTIAL FINDING IS ACCURATEBY: W. P. Maloney DATE: 9/17/82

IF THE "DISAGREE" BLOCK WAS CHECKED, USE THE SPACE BELOW TO PROVIDE INFORMATION THAT WOULD IMPROVE ACCURACY OR DEFINITION. (USE BACK FOR ADDITIONAL SPACE.)

The inclusion of additional (although unnecessary) cross-referencing information in the As-Built Log is not considered to be a defect. The inclusion of FCR's in the As-Built Log which have subsequently been incorporated into drawings do not compromise the overall intent and usefulness of the document.

D. REVIEW BY GA INITIATOR

☒ AGREE PF IS INVALID

REASON:

The PFE meets the invalid definition of Proc 2426-PD-16. (The items reported to be in error in the As Built Log are on the "safe" side as opposed to items omitted by error or whatever from the Log.

BY: W. P. Maloney DATE: 9/24/82

REVIEW BY GA TASK LEADER

☒ AGREE PF IS INVALID

REASON:

Agree with above - No conceivable safety impact

BY: J. Duval DATE: 9/27/82



POTENTIAL FINDING REPORT
PVNGS QUALITY ASSURANCE VERIFICATION

PFR NO. 2426-PFR 061 REVISION Issue A

A. PREPARATION BY GA INITIATOR

AFFECTED ITEMS:

As-Built Log, (Rev. 8/82), Unit #1.

REQUIREMENT REFERENCE DOCUMENTS:

Bechtel IP-4.33, Rev. 4, 5/8/80, paragraph 2.0, 4th sentence.

BASIC REQUIREMENT:

The As-Built log is a compilation of selected non-incorporated cross references which define As-Built conditions of each unit and which are not included in other permanent logs or documents.

DESCRIPTION OF POTENTIAL FINDING:

FCR 2027 entry states that it applies to Unit #1 and drawings 13-C-ZCS-117 (Rev. 3) and 13-C-ZCS-118 (Rev. 7). The As-Built Log does not list FCR 2027 for 13-C-ZCS-118, but does list it as applicable for drawings 13-C-ZCS-117 and 13-C-ACS-119.

FCR 18 7/24/82

ZCS per Bechtel 7/14/82

PREPARED BY: J. G. Kelly *[Signature]* DATE: 9/15/82

USE THE SPACE BELOW TO DOCUMENT ANY RE-REVIEW ACTION TAKEN BY INITIATOR ON THIS PFR.

SIGNATURE: _____ DATE: _____

B. REVIEW BY GA TASK LEADER

PFR NO. 2426-PFR 061

REVISION Issue A

☐ REQUEST RE-REVIEW

BY: _____ DATE: _____

REASONS:

☒ AGREE PF IS VALID/~~INVALID~~

BY: J. Burrell DATE: 9/13/82

☐ DISAGREE WITH INITIATOR

BY: _____ DATE: _____

REASONS:

C., D. SEE ATTACHED SECTIONS C AND D (PAGE 3)

E. RECOMMENDATION BY FINDINGS REVIEW COMMITTEE

ADDITIONAL INFORMATION REQUIRED

DEFINITION: ☒ ADEQUATE ☐ INADEQUATE

VALIDITY: ☐ VALID ☒ INVALID

CLASSIFICATION: ☐ OBSERVATION ☐ FINDING

JUSTIFICATION

CLASSIFICATION CRITERION NO. RESULTING IN "FINDING" _____

COMMENT ON "OBSERVATION" OR "FINDING" CLASSIFICATION:

BY: S. L. Koutz DATE: 9/24/82

BY: _____ DATE: _____

F. GA PROJECT MANAGER

☒ ACCEPT

☐ REJECT

BY: [Signature] DATE: 9/24/82

☐ AGREE ☒ DISAGREE THAT POTENTIAL FINDING IS ACCURATE

BY: *[Signature]* DATE: 9/17/82

IF THE "DISAGREE" BLOCK WAS CHECKED, USE THE SPACE BELOW TO PROVIDE INFORMATION THAT WOULD IMPROVE ACCURACY OR DEFINITION. (USE BACK FOR ADDITIONAL SPACE.)

A review of the condition indicates that a typographical error was made. When the information was taken from the input document it was entered as --119 instead of --118.

This isolated error, which is similar to the typo on page 1 of this PFR, is not considered to have a serious impact on the usefulness or accuracy of the As-Built Log.

This error will be corrected with the next issue of the As-Built Log.

D. REVIEW BY GA INITIATOR

☒ AGREE PF IS INVALID

REASON:

BY: *[Signature]* DATE: 9/22/82

REVIEW BY GA TASK LEADER

☒ AGREE PF IS INVALID

REASON: Invalid based on OOO information above and failure to meet definition at b of "Valid" in 2426-PD-K, sec 2B2.

BY: *[Signature]* DATE: 9/22/82



POTENTIAL FINDING REPORT
PVNGS QUALITY ASSURANCE VERIFICATION Issue
PFR NO. 2426-PFR-062 REVISION A

A. PREPARATION BY GA INITIATOR

AFFECTED ITEMS:

Shutdown Cooling Heat Exchanger Outlet Temperature Instruments (TE-303Y, TT-303Y and TI-303Y).

REQUIREMENT REFERENCE DOCUMENTS:

1. NUREG-0558 "Environmental Qualification of Safety Related Equipment"
2. FSAR Vol. VI Sect. 3.0. APPX 3.E.

BASIC REQUIREMENT:

Ref. 2 gives environmental qualification conditions which include "dust" requirements for building containing safety related equipment.

DESCRIPTION OF POTENTIAL FINDING:

1. The affected C.E. procurement specs. do not include dust in their environmental qualification requirements.

- a) C.E. Spec. 14273-ICE-0005
- b) Sys 80-ICE-4101

2. The equipment has not been qualified for the dust environment.

PREPARED BY: Alan Riddick DATE: 9/14/83

USE THE SPACE BELOW TO DOCUMENT ANY RE-REVIEW ACTION TAKEN BY INITIATOR ON THIS PFR.

SIGNATURE: _____ DATE: _____

B. REVIEW BY GA TASK LEADER

PFR NO. 2426-PFR -062

REVISION ^{Issue} A☐ REQUEST RE-REVIEW

BY: _____ DATE: _____

REASONS:

BY: *[Signature]* DATE: 9/14/82

BY: _____ DATE: _____

☒ AGREE PFR IS VALID/~~INVALID~~☐ DISAGREE WITH INITIATOR

REASONS:

C., D. SEE ATTACHED SECTIONS C AND D (PAGE 3)

E. RECOMMENDATION BY FINDINGS REVIEW COMMITTEE

DEFINITION: ☒ ADEQUATE ☐ INADEQUATEVALIDITY: ☒ VALID ☐ INVALIDCLASSIFICATION: ☒ OBSERVATION ☐ FINDING

JUSTIFICATION

CLASSIFICATION CRITERION NO. RESULTING IN "FINDING" _____

COMMENT ON "OBSERVATION" OR "FINDING" CLASSIFICATION:

Dust requirements should have been included in Spec. However, qualification for dust will be done under the on-going qualification program.

BY: *S. L. Koutz* DATE: 10/7/82

BY: _____ DATE: _____

F. GA PROJECT MANAGER

☒ ACCEPT☐ REJECTBY: *[Signature]* DATE: 10-7-82

C. REVIEW BY ORIGINAL DESIGN ORGANIZATION

PFR NO. -062

REVISION A

☒ AGREE ☐ DISAGREE THAT POTENTIAL FINDING IS ACCURATEBY: Glenn L. McCoy DATE: 9-24-82

IF THE "DISAGREE" BLOCK WAS CHECKED, USE THE SPACE BELOW TO PROVIDE INFORMATION THAT WOULD IMPROVE ACCURACY OR DEFINITION. (USE BACK FOR ADDITIONAL SPACE.)

Equipment environmental qualification to NUREG-0588 is on-going for the subject equipment (Temperature Instruments TE-303Y, TY-303Y and TI-303Y) under separate contract from the original procurement. Since the original procurement preceeded the requirement for dust environment qualification of NUREG-0588, that aspect of environmental qualification was not addressed in the documents cited in the description.

C-E is addressing the qualification of the subject equipment for dust environment as follows:

1. TE-303Y, an RdF Corporation Model 21245 RTD, has been analyzed for dust by C-E in Analysis No. 14273-9454-0169, Rev. 00.
2. TY-303Y is a Foxboro Resistance-To-Voltage converter (2AI-P2V) and TI-303Y is a Foxboro Indicator (270-IS). The dust qualification requirement for these items is being addressed in Document 14273-ICE-40036.

D. REVIEW BY GA INITIATOR

☐ AGREE PF IS INVALID

REASON:

BY: _____ DATE: _____

REVIEW BY GA TASK LEADER

☐ AGREE PF IS INVALID

REASON:

BY: _____ DATE: _____

IMPACT ASSESSMENT

PFR NO. 2426-PFR-062 ^{Issue} REVISION A

AFFECTED ITEM:

A. PREPARATION BY GA INITIATOR:

1. WHICH OF THE FIRST TWO POTENTIAL FINDING CLASSIFICATION CRITERIA APPLIES TO THIS PFR?
1 ☐, 2 ☐,
2. IN WHAT WAY MIGHT A SUBSTANTIAL SAFETY HAZARD BE CREATED AS A RESULT OF THE VIOLATION, DISCREPANCY OR ERROR (IF 1 OR 2 ABOVE WAS CHECKED)?:

3. OTHER COMMENTS:

See Attached Page 2

PREPARED BY: Alan Middleton *Alan Middleton* DATE: 10/5/82

B. PREPARATION BY GA TASK LEADER:

1. COMMENT ON ABOVE REPLIES: *Concur with the Initiator's assessment that this discrepancy has no impact on design adequacy.*

2. DOES EVIDENCE EXIST OF MULTIPLE SIMILAR VIOLATIONS, DISCREPANCIES OR ERRORS? IF SO, LIST RELEVANT PFR NO'S: *PFR-055*

3. IF POTENTIAL FINDING CLASSIFICATION CRITERIA 3, 4, OR 5 APPLIES, STATE WHICH ONE:

3 ☐, 4 ☐, 5 ☐ *N/A*

4. WHAT IS YOUR JUDGEMENT OF THE LIKELIHOOD OF MULTIPLE SIMILAR VIOLATIONS, DISCREPANCIES OR ERRORS ACTUALLY CREATING A SUBSTANTIAL SAFETY HAZARD - AND OF WHAT NATURE?

Not likely - equipment environmental qualification to INUREG-0588 requirements is an on-going activity.

5. OTHER COMMENTS:

PREPARED BY: *[Signature]* DATE: 10/6/82

Issue

Attachment to 2426-PFR-062 -Rev. A, Impact Assessment

1. CE agreed the PFR is valid and that the dust requirement should have been in CE Procurement Specs: (Spec. 14273-ICE-0005 and Sys. 80 ICE-4101). CE's reason for the omission is that the Procurement Specs. preceded the NUREG-0588 requirement for dust environmental qualification.
2. Regarding dust qualification of temperature element (TE-303Y), CE has sent us a portion of R.D.F. Co. aging analysis report for RTD's (14273-9452-Q169 Rev. 00)* In the manufacturer's evaluation, since the RTD's are totally enclosed and electrical connections are encased in a gasketed enclosure; dust qualification is not required.

I agree with the manufacturer's evaluation.

3. Regarding dust qualification of resistance/voltage converter (TY-303Y), CE has sent us Foxboro Report 14273-ICI-40036 which addresses dust and other environmental requirements in the control room.

This is an ongoing program by Foxboro which will qualify the equipment by type test or analysis/similarity.

Environment parameters (including dust levels) are in agreement with those specified in the FSAR (Vol. VI Sect. 3.0, Appx. 3.E).

I am satisfied that when Foxboro completes their qualification program, that all Foxboro equipment mounted in the control room will be fully qualified (environmentally).

* R D F Co. aging analysis report
finalized on 6/16/82

** Foxboro Report 14273-ICI-40036,
dated 11/19/81

ffs 10/7

POTENTIAL FINDING REPORT
PVNGS QUALITY ASSURANCE VERIFICATION

PFR NO. 2426-PFR -063 REVISION Issue B

A. PREPARATION BY GA INITIATOR

AFFECTED ITEMS:

1. Hand Switch - SIB-HS-6, Containment Spray Pump Manual Start
2. Pump - SIB-PO3-01B, Containment Spray Pump

REQUIREMENT REFERENCE DOCUMENTS:

See Page 1A

BASIC REQUIREMENT:

See page 1A

DESCRIPTION OF POTENTIAL FINDING:

See page 1A

PREPARED BY: M. J. Edwards

DATE: 10/13/82

USE THE SPACE BELOW TO DOCUMENT ANY RE-REVIEW ACTION TAKEN BY INITIATOR ON THIS PFR.

SIGNATURE: _____

DATE: _____

PREPARED BY GA INITIATOR/TASK LEADER

PAGE NO. 1A

Requirement Reference Documents

PVNGS FSAR Section 6.2.2 Containment Heat Removal Systems (Containment Spray System).

PVNGS FSAR Section 6.2.2.2 System Design (Remote manual operation from the main control room).

PVNGS FSAR Section 3.11 Environmental Design of Mechanical and Electrical Equipment.

PVNGS FSAR Section 3.7 Seismic Design

BPC Specification 13-JM-200, Main Control Panels

Basic Requirements

13-JM-200 Section 4.5.1.5; Verification of Qualification requirements of all Class Q1E equipment devices and instruments shall be in accordance with Appendix 4Y.

13-JM-200, Section 4.5.3.4 all instruments designated as Q in attachment 4-1 require qualification to appendix 4T.

Description of Potential Finding

1. The General Electric SBM switch is not included in Section 5.0 baseline Functional Test, of the Environmental/Seismic Test Plan J200-216-4. The baseline measurements must be taken prior to the environmental and seismic testing to be used for comparison of the test data.

2.. The General Electric SMB switch is not included in Section 6.0. Thermal Aging Plan, of the Environmental/Seismic Test Plan, J200-216-4. The accelerated thermal aging is required for each component in the panel to simulate 40 year end of life condition. This is accomplished by maintaining the component at an elevated temperature for a given period of time. The temperature and time period is determined by the Arrhenius life curve for the non-metallic materials in the component. This is accomplished by doing a material search of the non-metallic materials of the component. Consip did not submit a material search on General Electric SBM switch non-metallic parts in Appendix I, "Correspondence from Manufacturers".

B. REVIEW BY GA TASK LEADER

PFR NO. 2426-PFR - 063

REVISION B☐ REQUEST RE-REVIEW

BY: _____ DATE: _____

REASONS:

☒ AGREE PFR IS VALID/~~INVALID~~BY: Boyer DATE: 10/13/82☐ DISAGREE WITH INITIATOR

BY: _____ DATE: _____

REASONS:

Issue B retains the two valid concerns (Items 1 & 2 of Issue A).

Items 3 & 4 of Issue A have been invalidated on the basis of additional information provided by BPC in response to the PFR.

C., D. SEE ATTACHED SECTIONS C AND D (PAGE 3)

E. RECOMMENDATION BY FINDINGS REVIEW COMMITTEE

ADDITIONAL INFORMATION REQUIRED

DEFINITION: ☒ ADEQUATE ☐ INADEQUATEVALIDITY: ☒ VALID ☐ INVALIDCLASSIFICATION: ☒ OBSERVATION ☐ FINDING

JUSTIFICATION

CLASSIFICATION CRITERION NO. RESULTING IN "FINDING" _____

COMMENT ON "OBSERVATION" OR "FINDING" CLASSIFICATION:

Qualification still in progress

BY: S. D. Kouty DATE: 10/13/82

BY: _____ DATE: _____

F. GA PROJECT MANAGER

☒ ACCEPT☐ REJECTBY: [Signature] DATE: 10-14-82

POTENTIAL FINDING REPORT
PVNGS QUALITY ASSURANCE VERIFICATION

PFR NO. 2426-PFR -063 REVISION Issue A

A. PREPARATION BY GA INITIATOR

AFFECTED ITEMS:

1. Hand Switch - SIB-HS-6, Containment Spray Pump Manual Start.
2. Pump - SIB-PO3-01B, Containment Spray Pump

REQUIREMENT REFERENCE DOCUMENTS:

See page ~~A1~~ 1A 3A

BASIC REQUIREMENT:

See page ~~A1~~ 1A 3A

DESCRIPTION OF POTENTIAL FINDING:

See page ~~A1~~ 1A 3A

PREPARED BY:

M. Anderson

DATE:

9-17-82

USE THE SPACE BELOW TO DOCUMENT ANY RE-REVIEW ACTION TAKEN BY INITIATOR ON THIS PFR.

SIGNATURE: _____

DATE: _____

PREPARED BY GA INITIATOR/TASK LEADER

PAGE NO. 7A^{3A}Requirement Reference Documents

PVNGS FSAR Section 6.2.2 Containment Heat Removal Systems (Containment Spray System).

PVNGS FSAR Section 6.2.2.2 System Design (Remote manual operation from the main control room).

PVNGS FSAR Section 3.11 Environmental Design of Mechanical and Electrical Equipment

PVNGS FSAR Section 3.7 Seismic Design

BPC Specification 13-JM-200, Main Control Panels

Basic Requirements

13-JM-200 Section 4.5.1.5; Verification of Qualification requirements of all Class QLE equipment devices and instruments shall be in accordance with Appendix 4Y.

13-JM-200, Section 4.5.3.4 All instruments designated as Q in attachment 4-1 require qualification to appendix 4T.

Description of Potential Finding

1. The General Electric SBM switch is not included in Section 5.0 Baseline Functional Test, of the Environmental/Seismic Test Plan J200-216-4. The baseline measurements must be taken prior to the environmental and seismic testing to be used for comparison of the test data.

2. The General Electric SBM switch is not included in Section 5.0, Thermal Aging Plan, of the Environmental/Seismic Test Plan, J200-216-4. The accelerated thermal aging is required for each component in the panel to simulate 40 year end of life condition. This is accomplished by maintaining the component at an elevated temperature for a given period of time. The temperature and time period is determined by the Arrhenius life curve for the non-metallic materials in the component. This is accomplished by doing a material search of the non-metallic materials of the component. Consip did not submit a material search on General Electric SBM switch non-metallic parts in Appendix I, "Correspondence from Manufacturers".

3. Consip Customline Corp. submitted a seismic certificate of compliance for panel B02 dated 1/11/79 without supporting evidence (test results) in BPC submittal J200-203-2.

4. There is no evidence that hand switch SIB-456 was tested per Consip "Instrument Operational Test Report", S.O. 5875, Dwg. 5875-14 dated 12/21/78 and approved 1-9-79 on panel B02 in BPC submittal J200-203-2 sheet 44 through sheet 50.

B. REVIEW BY GA TASK LEADER

PFR NO. 2426-PFR - 063

REVISION

A

BY: _____ DATE: _____

☐ REQUEST RE-REVIEW

REASONS:

BY: fraser DATE: 9/17/82

BY: _____ DATE: _____

☒ AGREE PF IS VALID/INVALID

☐ DISAGREE WITH INITIATOR

REASONS:

C., D. SEE ATTACHED SECTIONS C AND D (PAGE 3)

E. RECOMMENDATION BY FINDINGS REVIEW COMMITTEE

DEFINITION: ☐ ADEQUATE ☐ INADEQUATE

VALIDITY: ☐ VALID ☐ INVALID

CLASSIFICATION: ☐ OBSERVATION ☐ FINDING

JUSTIFICATION

CLASSIFICATION CRITERION NO. RESULTING IN "FINDING" _____

COMMENT ON "OBSERVATION" OR "FINDING" CLASSIFICATION:

ADDITIONAL INFORMATION REQUIRED

BY: _____ DATE: _____

BY: _____ DATE: _____

F. GA PROJECT MANAGER

☐ ACCEPT

☐ REJECT

BY: _____ DATE: _____

☒ AGREE ☒ DISAGREE THAT POTENTIAL FINDING IS ACCURATE

BY: J. S. Bagg MS/ DATE: 9/23/82

IF THE "DISAGREE" BLOCK WAS CHECKED, USE THE SPACE BELOW TO PROVIDE INFORMATION THAT WOULD IMPROVE ACCURACY OR DEFINITION. (USE BACK FOR ADDITIONAL SPACE.)

- ① Agree
- ② Agree
- ③ Disagree - Panel B02 Test Results are not part of J200-203-2. Test Results are in J200-200-2. Please See attached sheet.
- ④ Disagree - Hand Switch SIB-HS-6 was tested per J200-203-2 sheet 43.

D. REVIEW BY GA INITIATOR

☐ AGREE PF IS INVALID

REASON:

BY: _____ DATE: _____

REVIEW BY GA TASK LEADER

☐ AGREE PF IS INVALID

REASON:

BY: _____ DATE: _____

Item 3) Invalidated. BPC has provided additional information in providing Dynamic and Seismic Analysis, Main Control Assembly, B02, B03, B04, B05, B05 per BPC submittal J200-200-1 and Final Report, Forced Vibration Listing of Control Panel 1B01, BPC submittal J300-196-2, thus satisfying the requirements of the specification 13-JM-200 Appendix 4U, Section 3.1, paragraph C.

Item 4). Invalidated. BPC has provided additional information per submittal J200-197-5 Control Panel Test Procedure, Consip No. 260-5875-MP-3 dated 2/16/79, Section 5.3 states, "At a minimum two (2) typical engineer's elementary wiring diagrams shall be selected, per panel, and used to perform the operability/continuity test in 5.1." This satisfies the requirement of 13-JM-200, Section 4.9.4 paragraphs C and D. A General Electric SBM switch (2-SIA-H55) was tested per BPC submittal J200-203-1 sheet 51.

M. Verdugo 10/13/82
M. Verdugo



Dynamic and Seismic Analysis
Main Control Assembly B02-B03-B04
B05-B06

Report No. 3.443.8/0882
SDS-APP 150-2 Rev.1

(TITLE PAGE ONLY - LARGE DOCUMENT)

JEM

J200-200-1

IMPACT ASSESSMENT

PFR NO. 2426-PFR-063 REVISION Issue B

AFFECTED ITEM: Handswitch, SIB-HS6 Containment Spray Pump Manual Start Pump, SIB-PO3-01B, Containment Spray Pump

A. PREPARATION BY GA INITIATOR:

1. WHICH OF THE FIRST TWO POTENTIAL FINDING CLASSIFICATION CRITERIA APPLIES TO THIS PFR?

1 ☐, 2 ☐,

2. IN WHAT WAY MIGHT A SUBSTANTIAL SAFETY HAZARD BE CREATED AS A RESULT OF THE VIOLATION, DISCREPANCY OR ERROR (IF 1 OR 2 ABOVE WAS CHECKED)?:

3. OTHER COMMENTS:

See attached page

PREPARED BY:

M. Verdugo

DATE:

10/13/82

B. PREPARATION BY GA TASK LEADER:

1. COMMENT ON ABOVE REPLIES:

Concur with Initiator's impact assessment. Since equipment qualification is in process, the deficiency will be addressed.

2. DOES EVIDENCE EXIST OF MULTIPLE SIMILAR VIOLATIONS, DISCREPANCIES OR ERRORS? IF SO, LIST RELEVANT PFR NO'S:

PFR - 073

3. IF POTENTIAL FINDING CLASSIFICATION CRITERIA 3, 4, OR 5 APPLIES, STATE WHICH ONE:

3 ☐, 4 ☐, 5 ☐

4. WHAT IS YOUR JUDGEMENT OF THE LIKELIHOOD OF MULTIPLE SIMILAR VIOLATIONS, DISCREPANCIES OR ERRORS ACTUALLY CREATING A SUBSTANTIAL SAFETY HAZARD - AND OF WHAT NATURE?

Not likely - Based on our review experience, there is interaction between BPC and their suppliers during the qualification process which

5. OTHER COMMENTS:

eventually resolves qualification concerns.

PREPARED BY:

f. Lopez

DATE:

10/13/82

Attachment to Impact Assessment 2426-PFR-063 Issue B

A safety hazard has not been created since the actual seismic and environmental testing on devices, SIB-HS6 has not been accomplished.

Baseline functional testing on the General Electric SBM switch, SIB-HS6, must be included in section 5.0 of the Environmental/Seismic test plan J200-216-6 in order to compare test results with baseline data. If baseline tests are not accomplished, the test results are meaningless.

Thermal aging on General Electric SBM switch, SIB-HS6, must be included in Section 6.0 of the Environmental/Seismic test plan in order to determine the environmental life (non-metallic materials) of the switch.

The environmental/seismic device qualification test procedures J200-216-6, has numerous significant comments in both environmental and seismic qualification. BPC is addressing these matters to Consip. Upon satisfactory resolution of BPC comments by Consip this document should be satisfactory.

If the baseline functional ^Stesting and thermal aging is not accomplished, then the switch cannot be qualified, which might create a substantial safety hazard by nullifying the test result and not knowing the end-of-life of the switch.

POTENTIAL FINDING REPORT
PVNGS QUALITY ASSURANCE VERIFICATION

PFR NO. 2426-PFR 064 REVISION Issue A

A. PREPARATION BY GA INITIATOR

AFFECTED ITEMS:

Auxiliary Feedwater System Remote Shutdown Panel No. 1J-ZJB-E02

REQUIREMENT REFERENCE DOCUMENTS:

1. NUREG 0588 "Environmental Qualification of Safety Related Equipment"
2. FSAR Vol. VI Section 3.0 Appx. 3E
3. IEEE Std. 344-1975 "Seismic Qualification of Class 1E Equipment".

BASIC REQUIREMENT:

(see page 1A)

DESCRIPTION OF POTENTIAL FINDING:

(See page 1A)

PREPARED BY: Alan M. D. B. L. DATE: 9/16/82

USE THE SPACE BELOW TO DOCUMENT ANY RE-REVIEW ACTION TAKEN BY INITIATOR ON THIS PFR.

SIGNATURE: _____ DATE: _____

PREPARED BY GA INITIATOR/TASK LEADER

PAGE NO.

1A

Basic Requirement

1. Ref. 1 states that Safety Related Equipment shall be environmentally qualified.
2. Ref. 2 gives environmental qualification requirements for those buildings containing Safety Related equipment.
3. Ref. 3 Para. 6.5 states that large assemblies such as control panels may be tested with dummy loads. The resulting vibration response of the device at its location shall be less than the vibration to which the device is qualified.

Description of Potential Finding

1. With respect to Basic Requirement 1 and 2, CE's standard spec for UNICAB Series 100 cabinets (Spec No. 00000-ICE-3022) does not require environmental testing.
2. With respect to Basic Requirement 3, there is nothing in CE seismic qualification procedure (Spec. No. 00000-ICE-3593) to ensure that the response input to the Bechtel qualified equipment mounted in the panel will fall within Bechtel's qualification requirement. Furthermore, CE spec has not specified a requirement to mount the accelerometers at the instrument location, so that instrument response can be determined. We have been advised verbally that Bechtel equipment mounted in the panel shall be qualified to Bechtel Spec. No. 13-JM-200. (Spec No. 13-JM-200 requires test response spectra for panel mounted equipment should be 40% above the floor response spectra.)

B. REVIEW BY GA TASK LEADER

PFR NO. 2426-PFR - 064

Issue A
REVISION

☐ REQUEST RE-REVIEW

BY: _____ DATE: _____

REASONS:

BY: F. Soper DATE: 9/17/82

BY: _____ DATE: _____

ALF ☒ AGREE PF IS VALID/INVALID

☐ DISAGREE WITH INITIATOR

REASONS:

C., D. SEE ATTACHED SECTIONS C AND D (PAGE 3)

E. RECOMMENDATION BY FINDINGS REVIEW COMMITTEE

DEFINITION: ☒ ADEQUATE ☐ INADEQUATE

VALIDITY: ☐ VALID ☒ INVALID

CLASSIFICATION: ☐ OBSERVATION ☐ FINDING

JUSTIFICATION

CLASSIFICATION CRITERION NO. RESULTING IN "FINDING" _____

COMMENT ON "OBSERVATION" OR "FINDING" CLASSIFICATION:

ADDITIONAL INFORMATION REQUIRED

BY: S. L. Koutz DATE: 10/11/82

BY: _____ DATE: _____

F. GA PROJECT MANAGER

☒ ACCEPT

☐ REJECT

BY: [Signature] DATE: 10-11-82

☐ AGREE ☒ DISAGREE THAT POTENTIAL FINDING IS ACCURATE

BY: Glenn X. McCay DATE: 9-24-82

IF THE "DISAGREE" BLOCK WAS CHECKED, USE THE SPACE BELOW TO PROVIDE INFORMATION THAT WOULD IMPROVE ACCURACY OR DEFINITION. (USE BACK FOR ADDITIONAL SPACE.)

Combustion Engineering (C-E) disagrees with the accuracy of the Potential Finding. C-E qualification procedure 00000-ICE-3593 gives the generic module curve which represents the limiting structural response to seismic acceleration at any location within the UNICAB-100-2 cabinet. This curve provides the information necessary for seismic qualification of all panel mounted equipment.

With respect to Basic Requirements 1 and 2, Bechtel is responsible for qualification of all of the Safety Related Equipment in the Remote Shutdown Disconnect Panel housed in the UNICAB Series 100 Cabinet. Only seismic testing is required for the cabinet, since temperature, humidity, and radiation extremes would affect the electrical equipment in the cabinet long before it would affect the cabinet.

D. REVIEW BY GA INITIATOR

☒ AGREE PF IS INVALID

REASON: SEE ATTACHED. PAGE 4.

BY: Alan Middleton DATE: 10/8/82

REVIEW BY GA TASK LEADER

☐ AGREE PF IS INVALID

REASON: Concur with Initiator's recommendation to invalidate this PFR based on additional information provided by C-E.

BY: [Signature] DATE: 10/8/82

Attachment to PFR-064 Issue A

Item 1: We agree that an environmental test is not necessary for the cabinet (with no electrical equipment installed) prior to seismic test. CE and Bechtel will qualify electrical hardware or procure hardware that is already qualified e.g. cables, terminal blocks, etc.)

One of Bechtel's responsibilities for qualification is HS-31. This handswitch is the subject of a separate review. PFR-073 documents potential findings for this item.

Item 2: The additional documentation sent by CE, after our two telecons with CE confirms that the appropriate seismic test level was sent to Bechtel. (see attached copy of letter V-CE-16285, 4/16/82*)

z

Am

10/8/82

** Item 4 of letter*

C-E Power Systems
Combustion Engineering, Inc.
1000 Prospect Hill Road
Windsor, Connecticut 06095

Tel. 203/688-1911
Telex: 99297

Attachment to
2426-PFR-064
pg. 5



RECEIVED
W. A. SIMON

October 5, 1982
V-CE-17190

OCT 6 1982

Mr. W. A. Simon
Project Manager
Torrey Pines Technology
10955 John J. Hopkins Drive
San Diego, CA 92121

COPIES _____
ROUTE _____
FILE _____

Subject: Document Transmittal Regarding Potential Finding Report
No. 2426-PFR-064, Issue A

Reference: Letter from W. A. Simon to C. Ferguson, TPT:173:WAS:82,
dated October 4, 1982

Dear Mr. Simon:

The reference letter requested two (2) specific documents required to complete your review in the area of equipment qualification of the Remote Disconnect Panel. Enclosed please find the requested documentation. These will be added to our document transmittal list as follows:

<u>TPT Identifier</u>	<u>Document #</u>	<u>Title</u>
TPT:WAS:82-A-1	V-CE-16285	Letter from C. Ferguson to W. G. Bingham, V-CE-16285, dated April 16, 1982 AC 4444-1081
TPT:WAS:82-A-2	Spec No. SYS80-ICE-0005 Rev. 02	General Specification for Instrumentation and Control Equipment for System 80 Standard Design, issued November 20, 1978 AC-4444-1082

Very truly yours,

COMBUSTION ENGINEERING, INC.

C. Ferguson
C. Ferguson
Project Manager

CF/PTB/cw

cc: Mr. E. E. Van Brunt, Jr.

Attachment To
2426-PFR-064
pg. 6



April 16, 1982
V-CE-16285

Mr. W. G. Bingham
Bechtel Power Corporation
12400 East Imperial Highway
Norwalk, CA 90650

Subject: Arizona Nuclear Power Project
Remote Shutdown Transfer Panel (TMI 18)

References: (A) Letter B/CE-E-39167, dated March 26, 1982
(B) Letter V-CE-16152, dated March 30, 1982
(C) Telecon from C-E (F. Murray) to Bechtel (K. Soteropoulos), April 2, 1982
(D) Telecon from C-E (F. Murray) to APS (B. Kershaw), April 8, 1982
(E) Telecon from C-E (F. Murray, F. Maguire, J. Arpin) to Bechtel (L. Delaney), April 14, 1982

Dear Mr. Bingham:

C-E's review of Reference (A), and subsequent correspondence, requires the following comments and clarifications:

- (1) Reference (B) outlined C-E's recommendation to APS for a manual loading station to replace the automatic indicator-controller for Atmospheric Dump Valve Control. The schematic passed to our Process Instrumentation Group in February does not contain sufficient information to procure the desired device. APS has directed C-E, in Reference (D), to purchase the automatic indicator-controller Bechtel has outlined. Therefore, we now request a specific model number of this Foxboro device, at your earliest opportunity, so that we can begin the procurement process for these items. C-E will proceed with transfer panel fabrication on the basis that there is no impact on termination quantities nor additional indication on the existing Remote Shutdown Panel. If C-E is to add 2 switches to the barriered Channel D section of the existing RSP we require nameplate information. We understand from Reference (E) that the ADV indicator-controller change-out requires no nameplate changes on the existing RSP.
- (2) Manufacture of the Unit 1 Transfer Panel is proceeding, despite the lack of specific wiring information Bechtel is to provide. We are pursuing the use of a wiring harness for the Unit 1 late additions, as discussed with our Paul Wolfe, as well as the changeout to an eight deck disconnect switch for Pressurizer Heater, as requested in Reference (C). At this time we intend to ship the Unit 1 Transfer Panel as originally specified (i.e. without the two process nests, SM15 for Pressurizer Heaters, and their associated wiring). The Unit 2 and 3 Transfer Panels will be shipped complete. A firm ship date for the Unit 1 Transfer Panel will be available shortly. We will advise APS of the cost and possible schedule impact of the additions described above by May 21, 1982.

Ac 4444-1081

(3) C-E is proceeding on the basis that the six dual and two single Foxboro indicators you are procuring for the Tasks 8 and 9B are their Model 270 ID/IS indicators with terminal strip terminations, and dimensions identical to the existing indicators, as shown in the attachment. C-E will provide the required termination information at the Remote Shutdown Panel. Receipt of Reference (A), unfortunately, was our first look at the tag number and engraving information for Auxiliary Feedwater Flow and Condensate Storage Tank Level; we can now pass this data along to our vendor.

(4) C-E has proceeded with manufacture of the Transfer Panel on the previously agreed basis that qualification of the terminal blocks, switches and process nests will be done by Bechtel to meet the C-E generic module ~~curve~~. C-E will investigate incorporation of the qualification results from the Foxboro nests in to the Transfer Panel qualification package as requested in Reference (A). Again, we will advise of cost and schedule impact of this change in jobscope. At this time we only require confirmation that the terminal blocks and switches are being qualified in the vertical orientation denoted in our drawings.

Please do not hesitate to contact us with any comments or questions. Your concurrence in writing with the assumptions outlined above is requested by April 26, 1982.

Very truly yours,

C. Ferguson / MFB

C. Ferguson
Project Manager

Attachment: Dimension Print
Foxboro 270
Series Electronic
Display Station

CF/FMM:db
V-IPE-1781

cc: E. E. Van Brunt, Jr. - w/1
J. Vorees - w/1
W. H. Wilson
R. H. Holm
W. L. MacDonald
G. A. Butterworth
S. H. Mager
G. C. Andognini
D. B. Amerine - w/1
K. Soteropoulos - w/1

POTENTIAL FINDING REPORT
PVNGS QUALITY ASSURANCE VERIFICATION

PFR NO. 2426-PFR 065 REVISION Issue B

A. PREPARATION BY GA INITIATOR

AFFECTED ITEMS:

1. PVNGS Unit 1 Core Protection Calculator System (Software) for findings and Items 1 through 7 below.
- *2. Instruments and Related Panel for finding Item 8 below.

REQUIREMENT REFERENCE DOCUMENTS:

Combustion Engineering Quality Assurance of Design Manual (QADM).
Procedure 5.3 (Interface Control)
Paragraphs 2.2 and 2.2.1

BASIC REQUIREMENT:

1. Transmittals requesting review, concurrence, approval, etc., of design information (i.e., specifications, calculations, drawings, etc.) shall contain a Document Distribution/Approval form (para. 2.2).
2. The completed Document Distribution/Approval form shall be returned to the originator and made a quality record (para. 2.2.1).

DESCRIPTION OF POTENTIAL FINDING:

The Document Distribution/Approval form was not used for transmittal during review and approval of the below listed design documents and completed quality record copies do not exist.

1. Spec. No. SYS80-ICE-3004, Rev. 03, 12/9/80, Gen. Spec. for DNBR/LPM Calculator Sys. 80 Std. Design.
2. Spec. No. 00000-ICE-3010, Rev. 06, 8/14/82, Gen. Spec. for Software Design for Core Penetration Calculator.
3. Spec. No. 00000-ICE-3026, Rev. 05, 8/14/81, Gen. Spec. for Software Design for Control Elem. Assy. Calculators. (Con't on page ~~4~~ 4)

PREPARED BY: J. Obenschain DATE: 9-30-82

USE THE SPACE BELOW TO DOCUMENT ANY RE-REVIEW ACTION TAKEN BY INITIATOR ON THIS PFR.

SIGNATURE: _____ DATE: _____

B. REVIEW BY GA TASK LEADER

PFR NO. 2426-PFR 065

REVISION Issue B

☐ REQUEST RE-REVIEW

REASONS:

BY: _____ DATE: _____

☒ AGREE PF IS VALID/INVALID☐ DISAGREE WITH INITIATOR

REASONS:

BY: J. Burne DATE: 9/30/82

BY: _____ DATE: _____

C., D. SEE ATTACHED SECTIONS C AND D (PAGE 3)

E. RECOMMENDATION BY FINDINGS REVIEW COMMITTEE

DEFINITION: ☒ ADEQUATE ☐ INADEQUATEVALIDITY: ☒ VALID ☐ INVALIDCLASSIFICATION: ☐ OBSERVATION ☒ FINDING

JUSTIFICATION

CLASSIFICATION CRITERION NO. RESULTING IN "FINDING" 2

COMMENT ON "OBSERVATION" OR "FINDING" CLASSIFICATION:

Interface review of Spec was not performed.

BY: S. L. Kouf DATE: 10/14/82

ADDITIONAL INFORMATION REQUIRED

BY: _____ DATE: _____

F. GA PROJECT MANAGER

☒ ACCEPT☐ REJECTBY: MA [Signature] DATE: 10-14-82

72th
1962☐ AGREE ☒ DISAGREE THAT POTENTIAL FINDING IS ACCURATE

BY:

Ilhan R. M. C. Cay

DATE:

10-6-82

IF THE "DISAGREE" BLOCK WAS CHECKED, USE THE SPACE BELOW TO PROVIDE INFORMATION THAT WOULD IMPROVE ACCURACY OR DEFINITION. (USE BACK FOR ADDITIONAL SPACE.)

The Description of the Potential Finding Report is accurate for Item 1 only.

The documents cited in the Description of the Potential Finding as Items Nos. 2, 3, 4, 5, and 6 were developed in the Instrumentation and Controls Engineering Department and did not require reviews, concurrence or approval outside the department. Therefore, a DD/A form for these specifications was not required as cited in Basic Requirement No. 1.

The document cited in the description of the Potential Finding as Item No. 7 was dated 10/4/77 and was not subject to Basic Requirement No. 2, which did not become effective until May 1, 1980.

Item 8 Specification No. 00000-ICE-3022, Rev. 00, 2/10/81, was developed in the Instrumentation and Controls Engineering Department and did not require review, concurrence or approval outside the Department. Therefore, a DD/A form for the specification was not required as cited in Basic Requirement No. 1.

Issue B

D. REVIEW BY GA INITIATOR

See discussions on attached Record of Long

☒ AGREE PF IS INVALID for documents REASON: Distance Telephone Calls.
2 thru 6, 8, and 7 (basic reqmt. 2).

Note: PF is still valid for document #1 (both basic requirements), and
document #7 (basic requirement #1 only).

BY:

J. Obenshain

DATE:

10-13-82

REVIEW BY GA TASK LEADER

☒ AGREE PF IS INVALID in part
as indicated by GA Initiator.

REASON:

BY:

J. E. Chafetz
for S. D. Bresnick

DATE:

10/13/82

POTENTIAL FINDING REPORT (CONT'D)

PFR NO. 2426-065

Issue B
REVISION 5

PREPARED BY GA INITIATOR/TASK LEADER

PAGE NO. 4

4. Spec. No. 00000-ICE-3031, Rev. 03, 8/14/81, Gen. Spec. for Software Design for CPC/CEAC Executive Sys.
5. Spec No. 00000-ICE-3208, Rev. 06, 4/15/77, Functional Design Spec. for Core Protection Calculator.
6. Spec No. 00000-ICE-3234, Rev. 04, 3/22/77, Functional Design Spec. for Control Element Assembly Calculator.
7. Spec No. 14273-ICE-3004, Rev. 00, 10/4/77, Project Spec. for DNBR/LPD Calculator Sys. for PVNGS, Units 1, 2 & 3.
- * 8. Spec No. 00000-ICE-3022, Rev. 00, 2/10/81, Standard Spec. for Unicab Series 100 Cabinets.

*These items added to Rev. B issue.

General Atomic Company
QUALITY ASSURANCE DEPARTMENT
Record of Long Distance Telephone Call

PFR 2426-065

issue B
p7.5

Party: Called ☒
Calling ☐

Date: 10-12-82

Time: Completed 1:03 PM

Name GLENN MCCOY/GEO. HUBA Started 12:50 PM

On-line 13 mins

Company CE

Location WINSOR, CONN.

Telephone No: A/C 203 No. 688 1911

Discussion I discussed the CE document "PVNGS-1 Task Plan
For CPC/CEAC Software Task" which I felt showed internal
interfaces from the instrumentation & Controls Eng Group to Nuclear
Eng. and Reactor Design Groups. This was contrary to their
reply on PFR 065 in which CE took the position that since
the design documents in question (items 2-6 & 8) were internal to
ICE the use of DDA was not required. I suggested that
Geo Huba obtain a copy of the above mentioned 'Task Plan'
(equivalent to PLN) and that we discuss it further on
10-13-82 after he reviewed it.

Record Made by J Obenschain

Distribution:

QUALITY ASSURANCE DEPARTMENTissue B
pg. 6Record of Long Distance Telephone CallParty: Called ☒
Calling ☐Date: 10-13-82Time: Completed 0819Started 0802On-line 17 minsName Geo Huba/Dave BertoCompany CELocation Winstor, Conn.Telephone No: A/C 203 No. 688 1911

Discussion dw conference call with the above parties; the
'Task Plan' interfaces was discussed. Dave Berto explained that
although the plan showed interfaces with the Nuclear
Engineering and Reactor Design Groups that this did not
necessitate review and approval of the Instrument + Control
Eng. Group specifications. He further explained that the
form and terms (technical computer code language) would make
review by persons ^{in interfacing groups who were} familiar with them very tedious if not
impossible. I agreed with these interpretations.

Record Made by J Obersthaus

Distribution:

POTENTIAL FINDING REPORT
PVNGS QUALITY ASSURANCE VERIFICATION

PFR NO. 2426-PFR 065 REVISION Issue A

A. PREPARATION BY GA INITIATOR

AFFECTED ITEMS:

PVNGS Unit 1 Core Protection Calculator System (Software)

REQUIREMENT REFERENCE DOCUMENTS:

Combustion Engineering Quality Assurance of Design Manual (QADM),
Procedure 5.3 (Interface Control)
Paragraphs 2.2 and 2.2.1

BASIC REQUIREMENT:

- 1) Transmittals requesting review, concurrence, approval, etc., of design information (i.e., specifications, calculations, drawings, etc.) shall contain a Document Distribution/Approval form (para 2.2)
- 2) The completed Document Distribution/Approval form shall be returned to the originator and made a quality record. (para 2.2.1)

DESCRIPTION OF POTENTIAL FINDING:

The Document Distribution/Approval form was not used for transmittal during review and approval of the below listed design documents and completed quality record copies do not exist.

1. Spec. No. SYS80-ICE-3004, Rev. 03, 12/9/80, Gen.Spec. for DNBR/LPM Calculator Sys. 80 Std. Design.
2. Spec No. 00000-ICE-3010, Rev. 06, 8/14/82, Gen. Spec. for Software Design for Core Penetration Calculator.
3. Spec. No. 00000-ICE-3026, Rev. 05, 8/14/81, Gen. Spec. for Software Design for Control Elem. Assy. Calculators

(Continued on Page ¹⁰ 5)

PREPARED BY: J. Obenschain DATE: 9/27/82

USE THE SPACE BELOW TO DOCUMENT ANY RE-REVIEW ACTION TAKEN BY INITIATOR ON THIS PFR.

SIGNATURE: _____ DATE: _____

B. REVIEW BY GA TASK LEADER

PFR NO. 2426-PFR 065

pg. 8
REVISION Issue A

☐ REQUEST RE-REVIEW

BY: _____ DATE: _____

REASONS:

☒ AGREE PF IS VALID/INVALID

BY: J. Burrie DATE: 7/27/12

☐ DISAGREE WITH INITIATOR

BY: _____ DATE: _____

REASONS:

C., D. SEE ATTACHED SECTIONS C AND D (PAGE 3)

E. RECOMMENDATION BY FINDINGS REVIEW COMMITTEE

ADDITIONAL INFORMATION REQUIRED

DEFINITION: ☐ ADEQUATE ☐ INADEQUATE

VALIDITY: ☐ VALID ☐ INVALID

CLASSIFICATION: ☐ OBSERVATION ☐ FINDING

JUSTIFICATION

CLASSIFICATION CRITERION NO. RESULTING IN "FINDING" _____

COMMENT ON "OBSERVATION" OR "FINDING" CLASSIFICATION:

BY: _____ DATE: _____

BY: _____ DATE: _____

F. GA PROJECT MANAGER

☐ ACCEPT

☐ REJECT

BY: _____ DATE: _____

C. REVIEW BY ORIGINAL DESIGN ORGANIZATION

PFR NO. 065REVISION A☐ AGREE ☒ DISAGREE THAT POTENTIAL FINDING IS ACCURATEBY: Glenn R. McCay DATE: 10-1-82

IF THE "DISAGREE" BLOCK WAS CHECKED, USE THE SPACE BELOW TO PROVIDE INFORMATION THAT WOULD IMPROVE ACCURACY OR DEFINITION. (USE BACK FOR ADDITIONAL SPACE.)

The Description of the Potential Finding Report is accurate for Item No. 1 only.

The documents cited in the Description of the Potential Finding as Item Nos. 2, 3, 4, 5, and 6 were developed in the Instrumentation and Controls Engineering Department and did not require reviews, concurrence or approval outside the department. Therefore, a DD/A form for these specifications was not required as cited in Basic Requirement No. 1.

The document cited in the Description of the Potential Finding as Item No. 7 was dated 10/4/77 and was not subject to Basic Requirement No. 2, which did not become effective until May 1, 1980.

D. REVIEW BY GA INITIATOR

☐ AGREE PF IS INVALID

REASON:

BY: _____ DATE: _____

REVIEW BY GA TASK LEADER

☐ AGREE PF IS INVALID

REASON:

BY: _____ DATE: _____

POTENTIAL FINDING REPORT (CONT'D)

PFR NO. 065

Issue
REVISION A

PREPARED BY GA INITIATOR/TASK LEADER

PAGE NO. 810

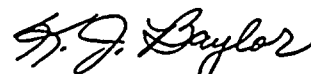
4. Spec. No. 00000-ICE-3031, Rev. 03, 8/14/81, Gen. Spec. for Software Design for CPC/CEAC Executive Sys.
5. Spec. No. 00000-ICE-3208, Rev. 06, 4/15/77, Functional Design Spec. for Core Protection Calculator.
6. Spec. No. 00000-ICE-3234, Rev. 04, 3/22/77, Functional Design Spec. for Control Element Assembly Calculator
7. Spec. No. 14273-ICE-3004, Rev. 00, 10/4/77, Project Spec. for DNBR/LPD Calculator Sys. for PVNGS, Units 1, 2 & 3.

PREPARED BY GA INITIATOR/TASK LEADER

PAGE NO. 11
36

After two telephone conversations with the Original Design Organization, CE, (see Telecons Attachments 1 and 2), I am still convinced that the original PFR is valid for the following reasons:

1. The O.D.O. agreed that the PFR is accurate for Document No. 1.
2. The O.D.O. agreed that the only part of the PFR which is inaccurate for Doc. No. 7 is the second part of the second basic requirement, and that basic requirement No. 1 is accurate.
3. Regarding documents No. 2-6, I cannot verify CE's claim that these documents exist strictly within the ICE Department and have no impact on or are impacted by any other department's activities, thereby not requiring a DD/A form. Since this was part of the CPC confidentiality agreement, these documents are available only at CE and the TPT initiator, J. Obenschain, who was at CE, is unavailable at this time. Thus, I cannot objectively confirm CE's contention and must assume the Potential Finding is valid for Nos. 2-6.



K. J. Baylor

General Atomic Company

QUALITY ASSURANCE DEPARTMENT

Record of Long Distance Telephone Call

#1

Party: Called ☒
Calling ☐

Date: Oct. 5, 1982

Time: Completed 11:25 a.m.

Started 10:30 a.m.

On-line 55 min.

Name Glenn R. McCoy

Company Combustion Engineering

Location Windsor, Conn.

Telephone No: A/C 203 No. 688-1911

Discussion Ref: 2426-PFR-065, Issue A.

We agreed on the following status of the individual documents listed in PFR-065:

1. Spec. No. SYS80-ICE-3004, Rev. 03 - accurately described as valid.
2. through 6. Various specs - invalid for the reasons cited by G. McCoy.

We disagreed on the status of Doc. 7 - Spec. 14273-ICE-3004, Rev. 00, dated 10/4/77. G. McCoy then decided to call in Tom Bracke and Gene Harvey

to participate in a 4-way conversation. I stated that I considered the PFR to be valid for Doc. 7 because, even though the QAPD 5.3, Rev. 1, did not become effective until after the date of the document (effective date of Rev. 1 - May 1, 1980) QAPD 5.3, Rev. 0 became effective on May 3, 1976, well before

the date of the document, and had substantially the same requirement of a

Document Distribution/Approval sheet to be used for review and kept in the

cognizant engineer's file. Tom Bracke carefully explained that that was not the objection which CE had to Basic Reqmt. 2. CE's objection was to

the second part of the sentence "...and made a quality record." Under the

ground rules for disposition of PFR's, if only part of a requirement is

incorrectly stated, CE can declare the whole sentence inaccurate. Although

the first part of the requirement in Rev. 0 was essentially the same as in

Rev. 1, it is true that Rev. 0 did not contain the words "... and made

a quality record." I had to agree with him on that point but wished to

make the point that the first part of Reqmt. 2 is accurate, to which he

agreed. We agreed to continue the conversation about the repercussions of

the missing DD/A's for Documents 1 and 7 after he contacted the cognizant engr.

(See follow-up Telecon at 1:00 p.m.)

Record Made by

R. J. Taylor

Distribution:

S. Bresnick

Attachment to PFR-065, Issue A.

General Atomic Company

QUALITY ASSURANCE DEPARTMENT

Record of Long Distance Telephone Calls

#2

Party: Called ☐
Calling ☒

Date: 10/5/82

Time: Completed 1:45 p.m.

Started 12:55 p.m.

On-line 50 min.

Name Tom Bracke

Company Combustion Engineering

Location Windsor, Conn.

Telephone No: A/C 203 No. 688-1911, Ext. 5431

Discussion Ref: 2426-PFR-065, Rev. A.

1. I re-stated by concern about Documents 1 and 7 possibly not having had sufficient review by departments other than the ICE dept. Gene Harvey

stated that neither document contained references to design output or input from/to any other dept. (I did not see the document; it is part of the Core Protection Calculator reviewed by Jim Obenschain from GA, currently on vacation). The cognizant engineer could not be located.

It should be noted that there are 3 types of review/^{signature}required on the DD/A QAPD 5.3 Rev 1 form: Type A, which must also appear on the cover of the document (and which apparently did appear since J. Obenschain did not report to the contrary); Type R and Type D, which appear only on the "accompanying" DD/A form. Type R is concerned with how design input was used, and Type D is concerned with impact on the reviewer's official interest. Both Gene and Tom re-iterated that there are ~~no~~ references to input/output from or to any department's work external to the ICE dept.

2. Tom Bracke wanted to know what to do about 2426-PFR-065, Rev. B. Since the existence of Rev. B was news to me, he described the changes between Rev. A and Rev. B, namely that Doc. No. 8 had been added and CE's response on p. 3 was replaced by a blank page. I promised to check on that and call him back in the morning at 8:00 a.m.

3. 10/6/82 8:30 a.m. I called Tom Bracke and advised him to respond to the Doc. #8 query only.

Record Made by

G. J. Taylor

Distribution:

S. Bresnick

Attachment to PFR-065.

ENGINEERING AND DEVELOPMENT
QUALITY ASSURANCE OF DESIGN PROCEDURE

PFR-065
pg. 14

TITLE: INTERFACE CONTROL	QADP <u>5.3</u> REVISION <u>1</u> EFFECTIVE <u>May 1, 1980</u>
REASON FOR REVISION: CLARIFY INTENT, RENUMBER PROCEDURE AND REVISE EXHIBIT 5.3-1	PAGE <u>1</u> OF <u>4</u> RECOMMENDED APPROVAL <u>[Signature]</u> APPROVED <u>[Signature]</u> <small>Manager, Engineering Quality Assurance</small> APPROVED <u>[Signature]</u> <small>Vice President, Engineering</small> PSGQA <u>[Signature]</u> <small>Vice President General Services</small> POLICY
PREVIOUS ISSUE Revision 0, dated May 3, 1976	

1.0 GENERAL

1.1 This procedure is followed to ensure that interfaces are properly identified and controlled, and that the efforts of participating design organizations are appropriately coordinated. The interface control measures of this procedure apply to the exchange of design information between organizations internal and external to Nuclear Power Systems (NPS).

1.2 Planning Logic Networks (PLN) are used to identify and schedule internal and external interface information transfer and interface reviews of design information. The PLN provides a systematic method for scheduling transmittal of major design information, including changes to the design information, across design interfaces as work progresses.

1.2.1 The use of alternative methods, such as the Planning & Control System (PACS), are acceptable provided it can be demonstrated that as implemented they meet the requirements of Paragraph 1.2.

1.3 Responsibilities of the Engineering & Development Departments are defined and documented in QAPD 3.0. Responsibilities of external organizations are defined and documented in contracts, manufacturing orders or purchase orders, and are unique to the particular external organizations involved. These responsibilities shall be considered by the cognizant engineer when interfacing is required between C-E functional groups or between C-E and external organizations.

1.4 The cognizant engineer is responsible for:

1.4.1 the technical adequacy of design information supplied to other organizations;

1.4.2 the review of incoming design information;

1.4.3 the resolution of design problems associated with an interface;

ENGINEERING AND DEVELOPMENT
QUALITY ASSURANCE OF DESIGN PROCEDURE

PFR-065
Pg. 15

QADP 5.3 REVISION 1
EFFECTIVE May 1, 1980
PAGE 2 OF 4

1.4.4 the preparation and transmittal of design information in accordance with the requirements of Sections 2.0 and 3.0 of this procedure;

1.4.5 satisfying the requirements for verification of design information in accordance with Section 4.0 of this procedure.

2.0 PREPARATION AND TRANSMITTAL OF INTERNAL INTERFACE INFORMATION

2.1 Transmittals requesting or supplying design information shall be by documented correspondence which is made a quality record. Data requests shall specify whether the data requested is required to be in accordance with the requirements of this manual.

2.2 Transmittals requesting review, concurrence, approval, etc., of design information (i.e., specifications, calculations, drawings, etc.) shall contain a Document Distribution/Approval form (Exhibit 5.3-1):

2.2.1 The Type of Approval (i.e., Approve, Review or Discretionary Review) shall be indicated on the Document Distribution/Approval form.

2.2.2 The completed Document Distribution/Approval form shall be returned to the originator and made a quality record.

2.3 Where design information is transmitted orally or by other informal means, the communications shall be documented in writing and made a quality record. This documentation must be accomplished prior to verifications of the design document in which the information is used.

2.4 Documents transmitting design information in response to a request shall reference the request.

3.0 PREPARATION AND TRANSMITTAL OF EXTERNAL INTERFACE INFORMATION

3.1 All required reviews external to C-E are defined by the Project Manager or his designated representative. The distribution of information to appropriate external organizations and agencies and the compilation of their comments for design group evaluation is the responsibility of the Project Manager or his designated representative.

3.2 Work subcontracted to vendors or consultants shall be documented by Manufacturing Orders (MO) or Purchase Orders (PO). The subcontracted

ENGINEERING AND DEVELOPMENT
QUALITY ASSURANCE OF DESIGN PROCEDURE

PFR-065
pg. 16

QADP 5.3 REVISION 1
EFFECTIVE May 1, 1980
PAGE 3 OF 4

work shall be controlled and the control documented as established in QADP 6.0, QADP 6.1, QADP 6.2 and QADP 6.3.

3.3 Where design information is transmitted orally or by other informal means, the communication shall be documented in writing and made a quality record. This documentation must be accomplished prior to verification of the design document in which the information is used.

3.4 Documents transmitting design information in response to an external request shall reference the request.

4.0 VERIFICATION OF DESIGN INTERFACE INFORMATION

4.1 Documents supplying design information shall be prepared and transmitted by the cognizant engineer. The cognizant engineer shall assure that the transmittal has considered the following:

4.1.1 The information being transmitted has received an independent review to confirm that it is suitable for the intended use in addition to meeting the requirements of the appropriate checklist.

Items which have not been independently reviewed shall be clearly identified. Documents which contain items of information which have not been verified shall have their cover sheets marked with the following statement:

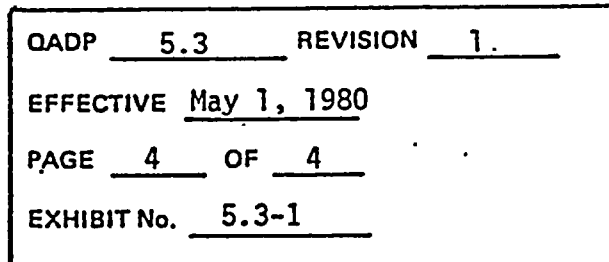
"Items indicated as 'Not Verified' in this document may be subject to additional CE Quality Assurance verification procedures. This information is suitable for the purposes for which this document is issued."

The transmittal document shall indicate when the information is expected to receive independent review. Once the information has been verified its subsequent transmittal shall be by controlled documentation.

4.1.2 The distribution is adequate. If the information being forwarded is a revision of previous information, the distribution shall include at least those persons who received the previous distribution or those who have succeeded such persons.

4.1.3 Documents transmitting design information in response to an external request shall reference the request.

PFR-065
pg. 17



CONTRACT (No. & NAME)/TASK 8973 WPPSS	ATTACHED DOCUMENT No. 8973-PE-IC65-Rev. 01	ORIGINATOR Esmail Aziz	INITIAL EA
TITLE OF ATTACHED DOCUMENT Gaseous Waste Management System Instrumentation and Control Design Requirements	TO BE STAMPED ON RECORD		
	YES X	NO	
REASON FOR TRANSMITTAL For Approval (upgrade to Rev. 01)			

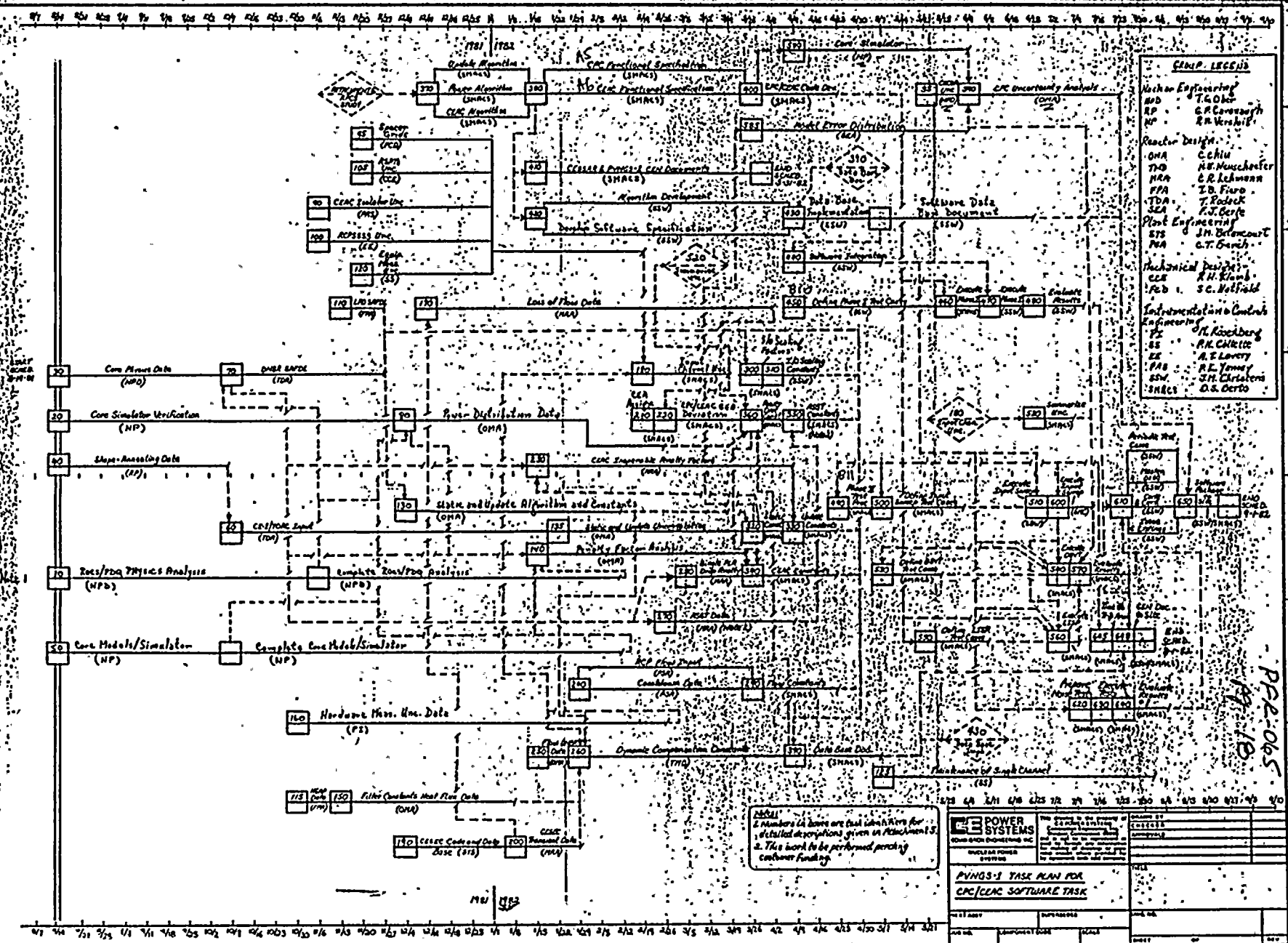
EXHIBIT

• **Note:** Enter code letter in box for type of approval desired:

	Type Approval	Code	Meaning
Approve:	sign cover sheet	A	Approved for intended use.
Review:	sign Distribution/Approval Sheet	R	Concurrence with the way my input was used.
Discretionary Review:	sign Distribution/Approval Sheet	D	Sections which directly impact my official interests are acceptable.

CE 0090239 (Rev. 6/78)

ATTACHMENT 4



- GROUP: LEGEND**
- Nuclear Engineering**
 T.O. Ober
 G.A. Conner
 R.N. Vershob
- Reactor Design**
 C. Chiu
 M. Henschel
 E.R. Lehmann
 T.D. Fiero
 T. Rodick
 J.T. Gerke
- Plant Engineering**
 J.M. Barmann
 C.T. Gorch
- Mechanical Design**
 R.H. Kline
 S.C. Holfield
- Instrumentation & Controls Engineering**
 H. Rosenberg
 R.H. Chittie
 A.E. Loomis
 J.E. Young
 J.M. Christensen
 D.S. Oertle

IMPACT ASSESSMENT

PFR NO. 2426-065 REVISION Issue B

AFFECTED ITEM:

PVNGS Unit 1 Core Protection Calculator System Software.

A. PREPARATION BY GA INITIATOR:

1. WHICH OF THE FIRST TWO POTENTIAL FINDING CLASSIFICATION CRITERIA APPLIES TO THIS PFR?

1 ☐ 2 ☒

2. IN WHAT WAY MIGHT A SUBSTANTIAL SAFETY HAZARD BE CREATED AS A RESULT OF THE VIOLATION, DISCREPANCY OR ERROR (IF 1 OR 2 ABOVE WAS CHECKED)?:

Without review by interfacing design groups, the CPC software specification may possibly omit essential requirements.

3. OTHER COMMENTS:

The Core Protection Calculator System for which these specifications were prepared has been successfully used on-line in an Arkansas Nuclear Power Reactor CPC system.

PREPARED BY:

J. Obenschain
J. Obenschain

DATE:

10-13-82

B. PREPARATION BY GA TASK LEADER:

1. COMMENT ON ABOVE REPLIES:

None.

2. DOES EVIDENCE EXIST OF MULTIPLE SIMILAR VIOLATIONS, DISCREPANCIES OR ERRORS? IF SO, LIST RELEVANT PFR NO'S:

None.

3. IF POTENTIAL FINDING CLASSIFICATION CRITERIA 3, 4, OR 5 APPLIES, STATE WHICH ONE:

Neither.

3 ☐ 4 ☐ 5 ☐

4. WHAT IS YOUR JUDGEMENT OF THE LIKELIHOOD OF MULTIPLE SIMILAR VIOLATIONS, DISCREPANCIES OR ERRORS ACTUALLY CREATING A SUBSTANTIAL SAFETY HAZARD - AND OF WHAT NATURE?

Unlikely. The Task D2 review uncovered no other such discrepancies.

5. OTHER COMMENTS:

None.

PREPARED BY:

J.E. Chafey
for S. D. Bresnick

DATE:

10/14/82



POTENTIAL FINDING REPORT
PVNGS QUALITY ASSURANCE VERIFICATION

PFR NO. 2426-PFR 066 REVISION Issue A

A. PREPARATION BY GA INITIATOR

AFFECTED ITEMS:

6" valve 1PCTBV014, Aux. Feedwater Transfer System from the Condensate Storage Tank

REQUIREMENT REFERENCE DOCUMENTS:

P&ID 13-M-CTP-001, Rev. 5

BASIC REQUIREMENT:

P&ID indicates the requirement for a "lock-open" device affixed to valve V014.

DESCRIPTION OF POTENTIAL FINDING:

Contrary to the P&ID requirement, valve V014 did not have the required lock-open feature. Valve was open and in use during the field verification.

See attachment.

PREPARED BY: R. D. Phelps RDP by PGR DATE: 9/16/82

USE THE SPACE BELOW TO DOCUMENT ANY RE-REVIEW ACTION TAKEN BY INITIATOR ON THIS PFR.

SIGNATURE: _____ DATE: _____

B. REVIEW BY GA TASK LEADER

PFR NO. 2426-PFR -066

Issue A
REVISION☐ REQUEST RE-REVIEW

BY: _____ DATE: _____

REASONS:

☒ AGREE PF IS VALID/~~INVALID~~☐ DISAGREE WITH INITIATOR

REASONS:

BY: Flores DATE: 9/16/82
BY: _____ DATE: _____

C., D. SEE ATTACHED SECTIONS C AND D (PAGE 3)

E. RECOMMENDATION BY FINDINGS REVIEW COMMITTEE**ADDITIONAL INFORMATION REQUIRED**DEFINITION: ☒ ADEQUATE ☐ INADEQUATEVALIDITY: ☐ VALID ☒ INVALIDCLASSIFICATION: ☐ OBSERVATION ☐ FINDING**JUSTIFICATION**

CLASSIFICATION CRITERION NO. RESULTING IN "FINDING" _____

COMMENT ON "OBSERVATION" OR "FINDING" CLASSIFICATION:

BY: S. L. Koutz DATE: 10/11/82 BY: _____ DATE: _____**F. GA PROJECT MANAGER**☒ ACCEPT☐ REJECTBY: [Signature] DATE: 10-14-82

C. REVIEW BY ORIGINAL DESIGN ORGANIZATION

PFR NO. 066

REVISION A

☐ AGREE ☒ DISAGREE THAT POTENTIAL FINDING IS ACCURATEBY: M. J. De DATE: 10/1/82

IF THE "DISAGREE" BLOCK WAS CHECKED, USE THE SPACE BELOW TO PROVIDE INFORMATION THAT WOULD IMPROVE ACCURACY OR DEFINITION. (USE BACK FOR ADDITIONAL SPACE.)

Although the condition described in the section "Description of Potential Finding" is accurate, it does not violate project procedures or design. The referenced P&ID correctly indicates that the valve requires a "lock-open" device during operations. The condition observed was found during startup testing. Per the Conference Notes transmitted by Bechtel letter B/ANPP-E-68811, item 6, the Project is, and was, aware that locking devices were not included as part of the valve design specification. These locking devices will be provided by APS prior to plant operation.

A copy of the referenced Conference Notes is attached.

D. REVIEW BY GA INITIATOR

☒ AGREE PF IS INVALIDREASON: APS's attached conference notes are logical and valid.BY: R. D. Phelps DATE: 10-10-82

REVIEW BY GA TASK LEADER

☒ AGREE PF IS INVALIDREASON: Concur with Initiator's recommendation to invalidate this PFR.BY: R. D. Phelps DATE: 10/11/82

2426^{VIII-4} PFR-066
Attachment,
pg. 4

Attachment, 18.4

PACKAGE NO. 1MI, PAGE 7 OF 27
SYSTEM AUXILIARY FEEDWATER
TAG NUMBERS CTE-T01, 1PCTBV014
REPRODUCED FROM 13-M-CTP-001, Rev. 5
DCN'S NONE
FCR'S NONE

CONDENSATE STORAGE TANK
CTE-T01
TANK IS BUILT TO QUALITY CLASS "Q" AND SEISMIC CATEGORY I, Q10

RESERVE
(1330,000 GAL)

Legend:
LOP ---
STAS ---
CPEFAS ---
CRV165 ---
STARTS (1)

CTE-TOI

TANK IS BUILT TO QUALITY
CLASS "A" AND SEISMIC
CATEGORY I.

RESERVE

(330,000 GAL)

Locking Devices.

PFR-066
Pg. 5

RECEIVED

FEB 06 1981

ANPP
CONSTRUCTION

Bechtel Power Corporation

Engineers - Constructors

12400 East Imperial Highway

Norwalk, California 90650

MAIL ADDRESS

P.O. BOX 60860 - TERMINAL ANNEX LOS ANGELES, CALIFORNIA 90060

TELEPHONE (213) 864-6011

B/ANPP-E-68811

MOC 136788

February 4, 1981



Arizona Nuclear Power Project
P. O. Box 21666 - Mail Station 3003
Phoenix, Arizona 85036

Attention: Mr. Edwin E. Van Brunt, Jr.
APS Vice President, ANPP Project Director


Subject: Arizona Nuclear Power Project
Bechtel Job 10407
ANPP Conference Notes No. CN-E-792
File: D.20.01

Dear Mr. Van Brunt:

Enclosed are five (5) copies of ANPP Conference Notes for the meeting held
at PVNGS Jobsite on January 14, 1981.

Very truly yours,

BECHTEL POWER CORPORATION


W. H. Wilson
Project Manager
Los Angeles Power Division

LO:kab

Enclosure: ANPP Conference Notes No. CN-E-792 (35 pages, 5 copies)

cc: F. W. Hartley
D. B. Fasnacht

FILE Conf / mtg.
Plant Maintenance

PFR-066
pg. 6

Arizona Nuclear Power Project
Bechtel Job 10407
Date: January 30, 1981
File: D.20.01

ANPP CONFERENCE NOTES NO. CN-E-792

DATE OF MEETING: January 14, 1981

LOCATION: PVNGS Jobsite

ATTENDEES:

<u>ANPP</u>	<u>Bechtel</u>
B. Ecklund	V. Najarian
R. Ozment	L. Ostlie
L. Templeton	* J. Hargon
B. White	* D. Pike
T. Wright	* B. Zarbo
	* H. Harbin

* Part time

SUBJECT: Plant Maintenance Provision

PURPOSE: To discuss plant maintenance and spare parts provisioning

0. KEY DECISIONS

A. Item 6: Valve Locking Devices

1. SPARE PARTS

- A. The updated Spare Parts Schedule (Attachment 1) was submitted for review by Bechtel Startup. APS stressed the need to track, and expedite, as necessary, the spare parts for purchase orders in accordance with pre-operational tests and equipment turnover schedules. Specific interest was focused at purchase orders WM 303 and WM 700 for which recommended parts lists had not yet been submitted for APS review. Subsequent to the meeting, these documents were transmitted to APS.
- B. APS reported that the completion of Spare Parts negotiations with G-E is pending settlement of terms and conditions. Startup recommended that as part of the spares program, G-E be responsible for inserting the information for lead time, shelf life, material, and unit price on the project spare parts forms. Mag cards could be utilized for the exchange of this information. APS to consider this recommendation and report at the next maintenance meeting.
(APS Action)

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Pg. 7

Page 2

- C. Startup reported that the expected cost of spare parts to meet the plant availability criteria will exceed the presently allotted amount. The over draft will be presented for APS approval once an estimate is formulated. (Bechtel Action)
- D. The quality categorization of spare parts was discussed. Bechtel suggested that instead of addressing each part listed on the spare parts form in terms of project quality classifications (Q.R.S.) that we conduct an engineering evaluation supported by information received by vendors to identify those items which are critical to the intended function of the equipment which originally determined the required project classification. This approach would give more flexibility to the spare parts program and would not create further complications associated with qualifying the equipment. This method was tentatively approved by APS. Bechtel will submit a formal outline at the next maintenance meeting. (Bechtel Action)
- E. The spare parts turnover procedure is with APS construction for development of the interface requirements.

2. INSTRUCTION MANUALS

Startup indicated that a new scheduling document was being assembled which would correlate Test Guidelines with required support documentation. It would serve as a tracking document to identify the necessity for expediting the review and acquisition of vendor information (i.e. instruction manuals). Bechtel to present completed document at next maintenance meeting. (Bechtel Action)

3. CONTAINMENT BREATHING AIR

The design considerations suggested by B/ANPP-E-67290, December 22, 1980 were discussed with no specific decisions concluded. Subsequent to the meeting, ANPP-17099 JMA/JRM January 16, 1981, was transmitted instructing Bechtel to pursue the design of a containment breathing air supply system for PVNGS. A Trend will be submitted for APS review. (Bechtel Action)

4. RCP OIL FILL/DRAIN CONNECTIONS

Possible provisions for draining/filling the RCP oil reservoir from outside the secondary shield were considered. The present design includes a fill line and a drain plug arrangement on the pump itself. This is adequate for normal operation. However, should an abnormal low level alarm occur during critical operation, a shutdown would need to be initiated to alleviate the problem. APS to further evaluate their need for modifying the present design. (APS Action)

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pg. 8

Page 3

5. REACTOR VESSEL LIFT RIG SHACKLE

The present lift rig shackle is being fabricated to fit the hydra set hook as called out in the specification. APS expressed a need to have the flexibility to use the main hook without the hydra set attached. Bechtel will transmit a letter to C-E requesting a quote for an additional shackle to attach to the lift rig which mates with the main crane hook. (Bechtel Action)

6. VALVE LOCKING DEVICES

Those valves indicated on P&ID's as being locked open/closed shall be held in position by locks and chains supplied by APS. Special locking devices were not included as part of the valve design specification.

7. CEDM VENTING

APS questioned whether or not there were possible interferences between the CEDM venting tool and the CEDM electrical connectors. Subsequent to the maintainance meeting, a phone communique between Bechtel and C-E indicated that the venting operation could be conducted with the CEDM electrical connectors in place.

8. TURBINE ROTOR

Bechtel reported that as of yet, no information has been received from G-E regarding the modification to the turbine generator rotor lifting apparatus. Bechtel to transmit an additional letter to G-E emphasizing the need for this information. (Bechtel Action)

9. MANWAY TENSIONER

Specification MM-186 is presently out for bid to the four companies represented on the bidders list. The bid responses are due by February 12, 1981.

10. RV MST TEST/SUPPORT STAND

Specification MM-187 is presently out for Bechtel internal review. It will be submitted to APS for review in late January 1981.

11. MM 175 EQUIPMENT

- A. Warranty difficulties surrounding MM 175A are not yet resolved. Bechtel has transmitted to the vendor a letter indicating the expected operational time schedules for the involved equipment and are expecting a warranty extension confirmation shortly.
- B. Several instruction manuals have not yet been received for equipment already delivered to the jobsite. This has been turned over to Expediting for contractual administration.

POTENTIAL FINDING REPORT
PVNGS QUALITY ASSURANCE VERIFICATION

PFR NO. 2426-PFR -067 REVISION Issue A

PREPARATION BY GA INITIATOR
AFFECTED ITEMS:

Valve Actuator Motor 1JAFBHV31

REQUIREMENT REFERENCE DOCUMENTS:

Valve Data Sheet 13-J-081-060 Rev. 1.

BASIC REQUIREMENT:

Valve Actuator Motor should be 3600 rpm.

DESCRIPTION OF POTENTIAL FINDING:

Valve Actuator nameplate shows 3400 rpm.

(attachment)

PREPARED BY: R.D. Darwin/W.L. Long /R. Benham

DATE: 9/17/82

USE THE SPACE BELOW TO DOCUMENT ANY RE-REVIEW ACTION TAKEN BY INITIATOR ON THIS PFR.

SIGNATURE: _____ DATE: _____

B. REVIEW BY GA TASK LEADER

PFR NO. 2426-PFR -067REVISION Issue A☐ REQUEST RE-REVIEW

BY: _____ DATE: _____

REASONS:

☒ AGREE PFR IS VALID/INVALID☐ DISAGREE WITH INITIATOR

REASONS:

BY: [Signature] DATE: 9/17/82

BY: _____ DATE: _____

C., D. SEE ATTACHED SECTIONS C AND D (PAGE 3)

E. RECOMMENDATION BY FINDINGS REVIEW COMMITTEE

ADDITIONAL INFORMATION REQUIRED

DEFINITION: ☒ ADEQUATE ☐ INADEQUATEVALIDITY: ☒ VALID ☐ INVALIDCLASSIFICATION: ☒ OBSERVATION ☐ FINDING

JUSTIFICATION

CLASSIFICATION CRITERION NO. RESULTING IN "FINDING" _____

COMMENT ON "OBSERVATION" OR "FINDING" CLASSIFICATION:

Wrong motor installed. However, knowledge of the error was available to BPC before the walk down + they now plan to replace the motor. Note: The valve closing time would have been within spec with the original motor.

S.K. 10/13/82

BY: S. D. Koutz DATE: 10/13/82

BY: _____ DATE: _____

F. GA PROJECT MANAGER

☒ ACCEPT☐ REJECTBY: [Signature] DATE: 10-14-82

C. REVIEW BY ORIGINAL DESIGN ORGANIZATION

PFR NO. 067

REVISION A

☒ AGREE ☐ DISAGREE THAT POTENTIAL FINDING IS ACCURATEBY: DATE: 10-5-82

IF THE "DISAGREE" BLOCK WAS CHECKED, USE THE SPACE BELOW TO PROVIDE INFORMATION THAT WOULD IMPROVE ACCURACY OR DEFINITION. (USE BACK FOR ADDITIONAL SPACE.)

The condition described is accurate. However, the Project was notified on May 18, 1982, by letter from Control Components, Inc., that the motors on the subject valves require replacement. This replacement will resolve the noted discrepancy. In the interim, NCR PC-4703 has been generated.

D. REVIEW BY GA INITIATOR

☐ AGREE PF IS INVALID

REASON:

BY: DATE:

REVIEW BY GA TASK LEADER

☐ AGREE PF IS INVALID

REASON:

BY: DATE:

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1 SERVICE. AF REG VLV PP B TO SG 2				PIPING CLASS DESIGNATION: DCCA							
2 FLUID: FEEDWATER				RADIATION EXPOSURE: 1×10^6 Rads							
3 FLOW (opm)		INLET PRESS.		OUTLET PRESS.		INLET TEMP		DESIGN 2426-PFR-067			
4 MIN: 550		1605 psia		165 psia		120 °F		PRESSURE 1720 psia			
5 MAX: 875		1440 psia		1390 psia		120 °F		TEMPERATURE 360 °F			
6 MAX DIFF PRESS: 1705 psi				LOCATION: INDOOR/OUTDOOR/CONTAINMENT: Main Steam Structure							
7 ENVIRONMENT: MAX PRESS. - SAT. PRESS.				MAX TEMP. - 540°F		HUMIDITY - 100 %		SPRAY FLUID -			
8 PROJECT CLASSIFICATION: Q/1/C				DEVICE CLASSIFICATION: QF, /QP							
9 LINE SIZE: 6"		LINE NO. 005		LINE SOND: 805		MAT'L: SA-37.5 SA-37.2 GT 3502					
10 VALVE				48 ACTUATOR							
11 TYPE		MATERIAL		Globe		SA-105		49 TYPE LIMITORQUE		ELECTRIC	
12 SIZE		END CONN		4"		1" RN (NOTE)		50 OPERATING RATED VOLTAGE		MIN TERM VOLTAGE	
13 PRESS.-TEMP CLASS		900		51 D.C./HZ		PHASE		60 HZ		55	
14 END EXTENSIONS: MAT'L		SCH'D		NONE 1/4"		52 VOLTAGE: NORM/MIN/MAX		460/47/1386			
15 BONNET TYPE/MAT'L		BOLTED		SA-105		53 AMPS		FULL STALLED LOAD		1.3	
16 BONNET BOLT MAT'L		ASME-SA 193-67		54		HP / RPM		1.3		13600	
17 PACKING/LEAK-OFF CONN		EXAMINED		YES		55 ENCLOSURE: NEMA TYPE					
18 LUBRICATOR/ISOL VALVE		NO		56 POSITION SWITCH CONTACTS - QUANTITY						6	
19 DRAIN PLUG/SIZE		NO		57 OUTPUTS/INTERNAL CONTROL							
20 FLOW: OPENS/CLOSES		CLOSE		58 TORQUE SWITCH CONTACTS-QUANTITY							
21 FAILS: OPEN/CLOSE/AS IS		AS IS		59 TORQUE SWITCH SET POINTS							
22 LEAK RATE (KCAL/HR)		MSS-SP-61		60 OPEN: NORM/MAX							
23 POSITION INDICATOR		YES		61 CLOSE: NORM/MAX							
24 VALVE ORIENTATION		HORIZONTAL		62 SPACE HTRS: VOLTS/WATTS							
25 STEM TRAVEL		6"		63 INTEGRAL: STARTER/CONTROL STATION							
26				64 BRAKE							
27 PORT SIZE		3"		65 POSIT-TRANSMITTER SIGNAL						0-2000 Ω (3 W)	
28 MATERIAL: DISC/PLUG		SA-37.5 SA-37.2		66 MAX SAFETIME STALLED							
29 GUIDES		N/A		67 MOTOR: TEMPRISE/INSULATION CLASS							
30 BUSHING		N/A		68 DUTY CYCLE: INTERMITTENT/SPECIAL						INTERMITTENT	
31 SEAT		SA 479 GR 304L		69							
32 STEM		SA 479-316		70 PACKAGE NO. 1-E-1						PAGE OF	
33				71 SYSTEM Aux FEEDWATER							
34				72 TAG NUMBERS 1JAFBHV 31							
				73 REPRODUCED FROM P.O. 13-JM-601A							
				74 DCN'S None							
				75 FCR'S None							
				76							
				77							
40 MFR-VALVE		CCI		MOTOR: MFR/MODEL NO.							
41 MODEL NO.-VALVE		EX 64-X3-X676-13/14 31		ACTUATOR: MFR/MODEL NO.		LIMITORQUE		SB-00-110			
42 TOTAL WEIGHT		(APPROX) 1000 LBS		REMARKS:							
43 SUPPLIER CONTROL COMPONENTS INC				1) MACHINE 6" BW ON 4" BODY							
44 PAID NO. 13-M-AFP-001A				2) WELD END PREP: APP 40, DWG. 13-P							
45 M.R./P.O. & ITEM NO. 13-JM-601A/6.14.92				ZZG-005							
46 QUANTITY REQ'D: 3											
47 INSTRUMENT TAG NO. B-HV-31											
48 3877 ISSUED FOR FABRICATION											
49 225-3 REVISED DATA											
NO. DATE		REVISIONS									
ORIGIN				MOTOR ACTUATED VALVE DATA SHEET		JOB NO. 10407		DATA SHEET NUMBER		REV.	
				ARIZONA NUCLEAR POWER PROJECT							
				PALO VERDE NUCLEAR							
				GENERATING STATION				13-J-021-063		1	

IMPACT ASSESSMENT

PFR NO. 2426-PFR-067 REVISION Issue A

AFFECTED ITEM:

Valve Actuator Motor 1JAFBHV31

A. PREPARATION BY GA INITIATOR:

1. WHICH OF THE FIRST TWO POTENTIAL FINDING CLASSIFICATION CRITERIA APPLIES TO THIS PFR?

1 ☐, 2 ☐,

2. IN WHAT WAY MIGHT A SUBSTANTIAL SAFETY HAZARD BE CREATED AS A RESULT OF THE VIOLATION, DISCREPANCY OR ERROR (IF 1 OR 2 ABOVE WAS CHECKED)?:

3. OTHER COMMENTS: Stroking time for this valve is specified to be 10 sec or less. If a 3600 rpm motor provided the required 10 sec time then a 3400 rpm motor would provide a longer stroking time of ≈ 0.6 sec. Whether this is significant or not is not known. There are three other identical valves for each unit - namely HV-30, HV-32, and HV-33 which may be affected.

PREPARED BY: R. Benham *R. Benham* DATE: 10-13-82

B. PREPARATION BY GA TASK LEADER:

1. COMMENT ON ABOVE REPLIES: *In the review of the A.F.S. startup time sequences were evaluated. The FSAR requires that the system deliver flow to the SG: (a) within 10 sec. when normal offsite or normal onsite power is available and (b) within 45 sec. when both normal onsite and normal offsite are not available. (cont'd, Item 5 below)*

2. DOES EVIDENCE EXIST OF MULTIPLE SIMILAR VIOLATIONS, DISCREPANCIES OR ERRORS? IF SO, LIST RELEVANT PFR NO'S:

N/A

3. IF POTENTIAL FINDING CLASSIFICATION CRITERIA 3, 4, OR 5 APPLIES, STATE WHICH ONE:

3 ☐, 4 ☐, 5 ☐ *N/A*

4. WHAT IS YOUR JUDGEMENT OF THE LIKELIHOOD OF MULTIPLE SIMILAR VIOLATIONS, DISCREPANCIES OR ERRORS ACTUALLY CREATING A SUBSTANTIAL SAFETY HAZARD - AND OF WHAT NATURE?

Not likely

5. OTHER COMMENTS:

Based on pump, valve, and diesel generator test data, the corresponding time sequences evaluated resulted in startup times of (a) 9.0 sec. and (b) 25.5 sec, respectively. The difference in stroking time for the valve of 0.6 sec will not result in exceeding FSAR limits. Additionally, APS recognized the need to replace motors, but had not initiated the paper work.

PREPARED BY: FSB/Jul D DATE: 10/13/82



POTENTIAL FINDING REPORT
PVNGS QUALITY ASSURANCE VERIFICATION

PFR NO. 2426-PFR -068 REVISION Issue A

A. PREPARATION BY GA INITIATOR

AFFECTED ITEMS:

Pipe Support H002 on Pipe Line AF-B-005-DCCA-6"

REQUIREMENT REFERENCE DOCUMENTS:

Dwg. 13-AF-005-H002 Rev. 1 (attachment 1)
FCR 32861-P (attachment 2)
WP/P QCI No. 201.1 Rev. 16

BASIC REQUIREMENT:

Pipe support shall be installed per the dimensions described on Dwg. 13-AF-005-H002, Rev. 1 with an axial tolerance of $\pm 6"$ (WP/P QCI No. 201.1 Rev. 16).

DESCRIPTION OF POTENTIAL FINDING:

An FCR (Field Change Request) was issued against Dwg. 13-AF-005-H002, Rev. 1 which changed the location of the support on the pipe 1' 9" to 8 13/16" (see attachment 2). The FCR was only for Units 2 and 3, but the new dimension is also found in Unit 1. Thus, either the installation is incorrect in Unit 1 or the FCR is incorrect.

PREPARED BY:

C. Dahms
C. Dahms

DATE: 9/17/82

USE THE SPACE BELOW TO DOCUMENT ANY RE-REVIEW ACTION TAKEN BY INITIATOR ON THIS PFR.

SIGNATURE: _____

DATE: _____

B. REVIEW BY GA TASK LEADER

PFR NO. 2426-PFR - 068

REVISION ^{Issue A} A☐ REQUEST RE-REVIEW

BY: _____ DATE: _____

REASONS:

BY: flop DATE: 9/17/82

BY: _____ DATE: _____

☒ AGREE PF IS VALID/INVALID☐ DISAGREE WITH INITIATOR

REASONS:

C., D. SEE ATTACHED SECTIONS C AND D (PAGE 3)

E. RECOMMENDATION BY FINDINGS REVIEW COMMITTEE

ADDITIONAL INFORMATION REQUIRED

DEFINITION: ☒ ADEQUATE ☐ INADEQUATEVALIDITY: ☒ VALID ☐ INVALIDCLASSIFICATION: ☒ OBSERVATION ☐ FINDING

JUSTIFICATION

CLASSIFICATION CRITERION NO. RESULTING IN "FINDING" _____

COMMENT ON "OBSERVATION" OR "FINDING" CLASSIFICATION:

Documentation error but hardware is acceptable.

BY: S. A. Kouty DATE: 10/7/82

BY: _____ DATE: _____

F. GA PROJECT MANAGER

☒ ACCEPT☐ REJECTBY: WA DATE: 10-17-82

C. REVIEW BY ORIGINAL DESIGN ORGANIZATION

PFR NO. 068

REVISION A

☒ AGREE ☐ DISAGREE THAT POTENTIAL FINDING IS ACCURATEBY: U. L. L. DATE: 9-30-82

IF THE "DISAGREE" BLOCK WAS CHECKED, USE THE SPACE BELOW TO PROVIDE INFORMATION THAT WOULD IMPROVE ACCURACY OR DEFINITION. (USE BACK FOR ADDITIONAL SPACE.)

NCR PC-4504 was issued on September 3, 1982, to document and obtain resolution for the discrepancy. The NCR has been dispositioned "Use-As-Is". A copy of NCR PC-4504 is attached.

D. REVIEW BY GA INITIATOR

☐ AGREE PF IS INVALID

REASON:

BY: _____ DATE: _____

REVIEW BY GA TASK LEADER

☐ AGREE PF IS INVALID

REASON:

BY: _____ DATE: _____

RETENTION TIME L1 mo.STATUS: ADDVENDOR: HBA

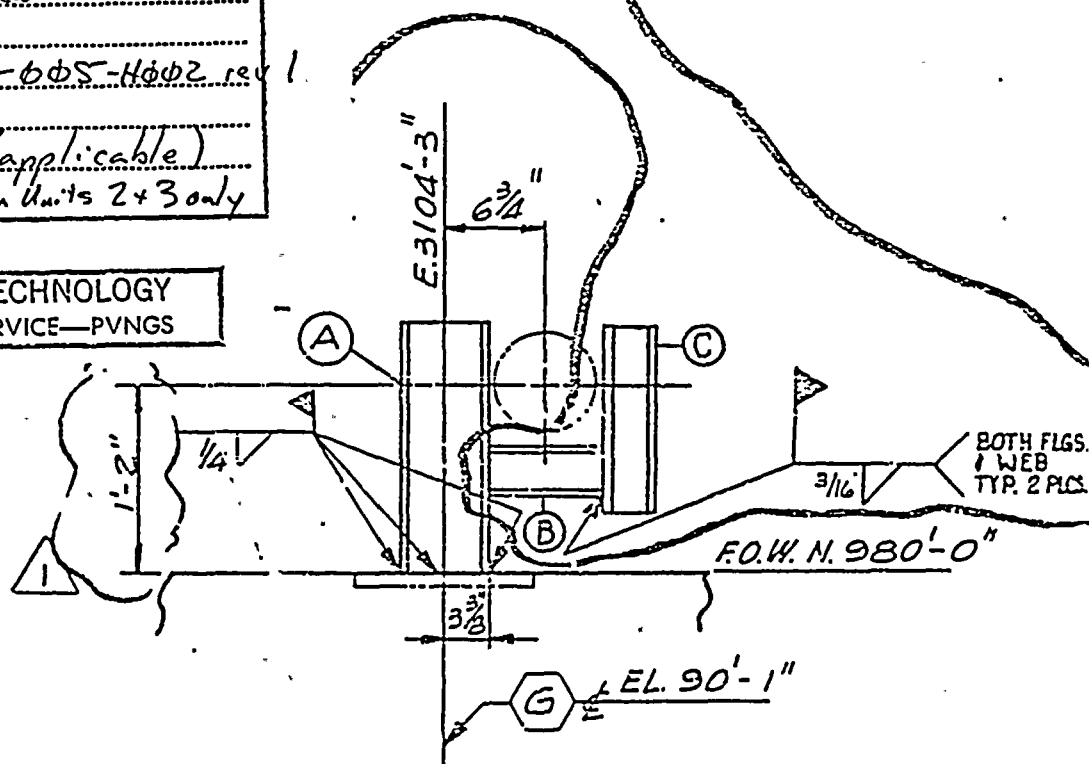
PALO VERDE NUCLEAR GENERATING STATION			NONCONFORMANCE REPORT			PC NO. <u>4504</u>		PAGE <u>1</u> OF <u>1</u>	
1. UNIT <u>1</u>	2. MO DAY YR <u>9/3/82</u>	3. DRAWING/PART NO. <u>13-AF-005-H002</u>	REV. <u>1</u>	4. ITEM DESCRIPTION <u>PIPE SUPPORT</u>	5. ITEM LOCATION <u>M355 BLDG</u>				
6. Q CLASS <u>QIC</u>	7. STARTUP SYSTEM NO. <u>AF-02</u>	8. SERIAL NO. <u>NA</u>	9. SUBCONTRACTOR/SUPPLIER/BECHEL <u>BECHEL</u>		10. P.O. OR SPEC NO. <u>R13</u> <u>13-PM-204</u>	11. ASME AUTHORIZED INSPECTION REQ'D. <input type="checkbox"/> YES <input checked="" type="checkbox"/> NO			
ITEM	12. DESCRIPTION LIST IN ORDER: NO. PCS., DWG/SPEC REQMT., PRESENT CONDITION			16. FIELD ENGR DECISION	17. <input checked="" type="checkbox"/> FIELD RECOMMENDED DISPOSITION <input type="checkbox"/> ENGINEER CONCURRENCE REQ'D. <input type="checkbox"/> ENGINEER DISPOSITION REQ'D.				
	HANGER WAS INSTALLED AND BOUGHT-OFF PER FCR 32,861-P. HOWEVER, FCR 32,861-P WAS WRITTEN FOR UNIT 2 & 3 ONLY. FCR 32,861-P APPLIES TO UNIT 1 CONDITION.			USE AS IS	ENGINEERING APPROVED FOR 32,861-P CORRECTS A CRITICAL DIMENSIONAL ERROR ON THE DESIGN DWG. EXISTING LOCATION OF SUPPORT IS PER FCR 32,861-P.				
13. REPORTED BY: <u>CRAIG BRNA</u>		15. INSPECTION/VALIDATION/REVIEW DATE <u>9-6-82</u> <u>9/7/82</u>			15A. REPORTABILITY EVALUATION: NOT REPORTABLE: <input checked="" type="checkbox"/> OR DER NO. _____		REVIEWERS: R/E <u>[Signature]</u> QA <u>[Signature]</u> DATE <u>9-7-82</u>		
19. ACCEPTANCE OF REWORK/REPAIR <input type="checkbox"/> QC ENGR <u>NA - 9-13-82</u> <input type="checkbox"/> FIELD ENGR _____		AUTHOR. INSP <u>NA</u> DATE _____			18. DISPOSITION CONCURRENCE PROJ FIELD ENGR <u>[Signature]</u> DATE <u>9/13/82</u> GROUP SUPV <u>[Signature]</u> DATE <u>9/13/82</u> AUTHORIZED INSPECTOR <u>NA</u> DATE _____		NUCLEAR GROUP SUPV <u>NA</u> (IF REQUIRED) DATE _____ PROJ ENGR <u>[Signature]</u> DATE <u>9/13/82</u> QA ENGR <u>[Signature]</u> DATE <u>9/13/82</u>		
14. ASSUMED CAUSE OF DISCREPANCY <u>Q.C. ERROR</u>				INITIATOR <u>[Signature]</u> ²⁰² DATE <u>9/3/82</u>					

ITEM NO	NO. REQ'D	DESCRIPTION	NOTES
A	1	W6 x 12 x 1'-6"	SPEC 13-CM-131
B	1	W4 x 13 x 0'-10" (FIELD CUT TO 30 FT)	13-CM-131
C	1	W4 x 13 x 0'-11"	13-CM-131

PACKAGE NO. 1-M10, PAGE OF
SYSTEM Auxiliary Feedwater
TAG NUMBERS H002
REPRODUCED FROM 13-14F-005-H002 rev 1
DCN'S None
FCR'S 32861-P23 (applicable)
for Units 2 & 3 only

QUALITY CLASS Q

TORREY PINES TECHNOLOGY
ARIZONA PUBLIC SERVICE—PVNGS



PLAN

$1'' = 1' - 0''$
REST: EL. 89'-3"

RECEIVED

JUN 11 1982

CONSTRUCTION
PINGS

[illegible]

FOR STRUCTURAL
NOTES SEE DWG -

BECHTEL
LOS ANGELES

PIPE SUPPORT ASSEMBLY

AF-02

ARIZONA NUCLEAR POWER PROJECT
PALO VERDE NUCLEAR
GENERATING STATION

JOB NO.

DRAWING NO. ZC

REV

10407

13-AF-005-H-002

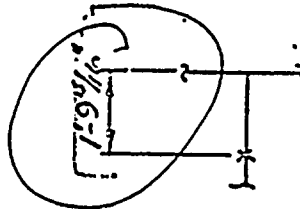
i

01-2-136

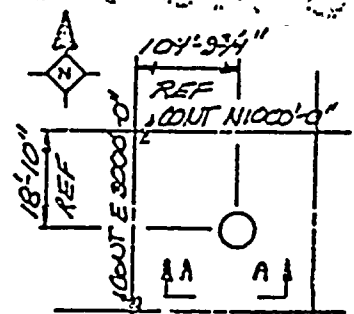
[illegible]

TAG NO. AF-065-11-003

PACKAGE NO. 1-M10, PAGE OF
SYSTEM Auxiliary Feedwater
TAG NUMBERS 4002
REPRODUCED FROM 13-AF-005-4002 rev 1
DCN'S 1042
FCR'S 32861-P23 (applicable)
(for units 2 & 3 only)

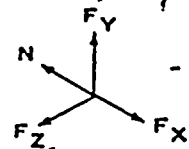


SECTION A-A

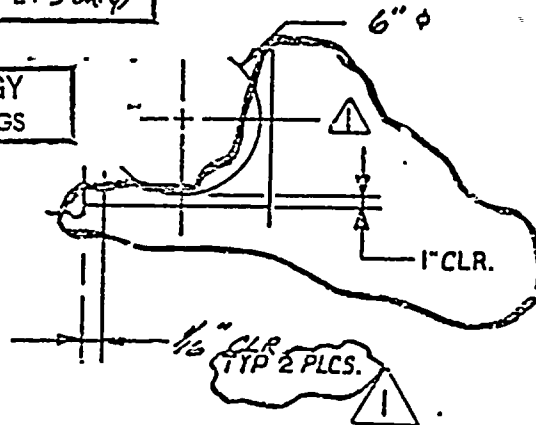


LOCATION PLAN

AREA NO. CAF
CONT BLDG



TORREY PINES TECHNOLOGY
ARIZONA PUBLIC SERVICE—PVNGS



PLAN
RESTRAINT BEL 89'3"

FACE

PROJ. CLASS. Q/C

MAX. TEMP. 120°F

OPER. LOAD (LBS).

DESIGN LOAD (LBS).

 5.021×10^{-4}

018 v

5

2512

5

SPOOL NO. 4

AF-005-5-002

13-G-265-707	INSERTS	1	5/2/82	REVISED PER STRESS ANALYSIS.
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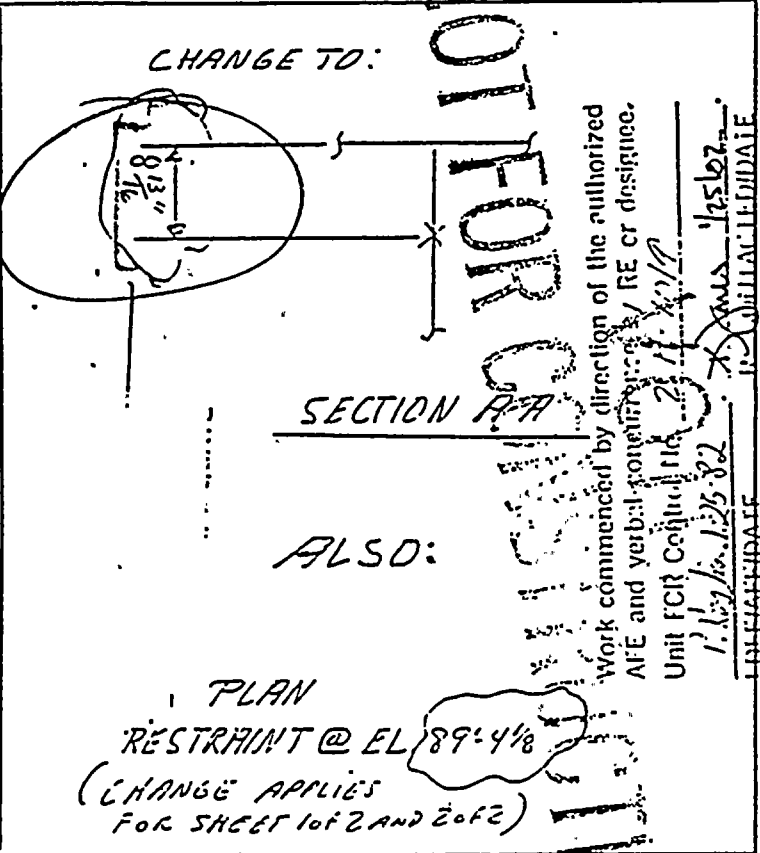
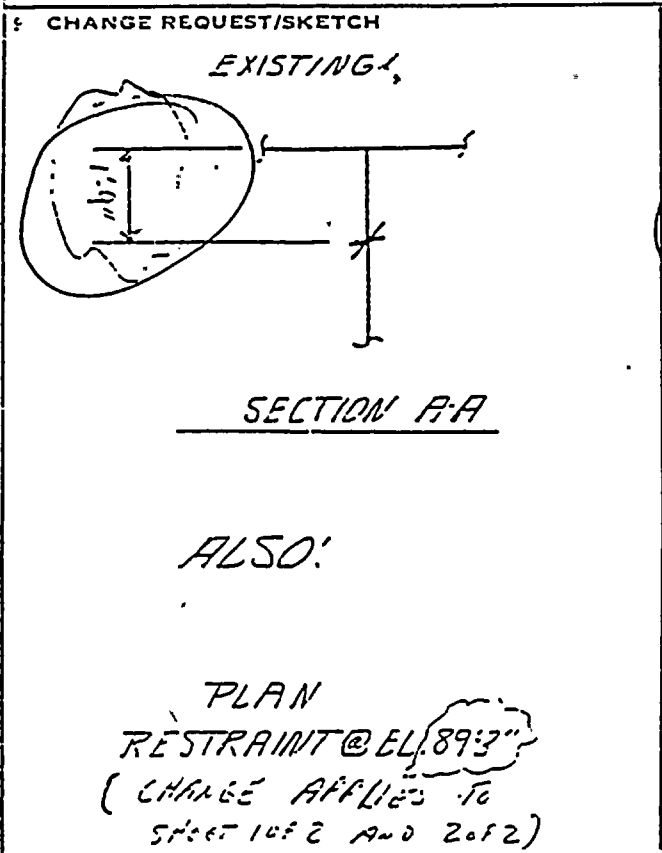
AF-133 12/17/77	SYSTEM ISO.	0	3/24/78	ISSUED FOR CONSTRUCTION
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DWG. NO.	REFERENCE	REV	DATE	REVISIONS
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PALO VERDE NUCLEAR GENERATING STATION		PAGE 1 OF 21		NO. 32861-P		13A. DCN NO. N/A	
FIELD CHANGE REQUEST		QUALITY CLASS B/C		DATE 1/22/82		13B. SCN NO. N/A	
JOB NO. 10407							

4. REF DWG OR SPEC VER-005-A-002	REV 0	5. TITLE PIPE SUPPORT MASS-STEEL 2-1/2"
6. DESIGN ORIGIN <input checked="" type="checkbox"/> ENGINEERING <input type="checkbox"/> SUPPLIER (IDENTIFY BY NAME)		<input type="checkbox"/> UNIT 1 <input checked="" type="checkbox"/> UNIT 3 <input checked="" type="checkbox"/> UNIT 2 <input type="checkbox"/> COMMON

8. EXISTING CONDITION
CRITICAL DIMENSION IS IN ERROR 15.013 P.F.F.
122 FEET 7 SHOULD A RISER BETWEEN A 6" 90° ELBOW AT EL.
89' 3 1/8" AND THE AT 90° D.S. CHANGE CRITICAL DIMENSION
AS SHOWN BELOW. ALSO CHANGE RESTRAINT EL. 89' 3 TO 89' 4 1/8"



NOT FOR CONSTRUCTION

Work commenced by direction of the authorized
A/E and verbal confirmation by RE or designee.
Unit FCR Confirmed 1/25/82
1/25/82
DATE

10. REVIEWED BY: IE
Joe Lane 1/25/82

11. PREPARED BY: Joseph A. Denner

12. APPROVAL OF FIELD DISPOSITION:
Wannell 1/25/82
PROJECT FIELD ENGINEER DATE

APPROVED
N/A
NUCLEAR GROUP SUPERVISOR (IF REQUIRED) DATE

FOAT
N/A
10-LISTED P&I AND SINGLE LINE DWGS
QUALITY CLASS O AND R SPEC

8-282
AUG 06 1982

CONSTRUCTION
PVNGS

10 - CLIENT SURVEY, DISCIPLINE, AND RESIDENT ENGINEER.

EMENT MANAGER ☐ COST TREND ENGINEER

PACKAGE NO. 1M10, PAGE OF
SYSTEM Auxiliary Feedwater
TAG NUMBERS H002
REPRODUCED FROM FCR 32861-P
DCN'S NA
PERS rel. dwg 13-AF-005-H002 rev 0

IMPACT ASSESSMENT

PFR NO. 2426-PFR-068 REVISION Issue A

AFFECTED ITEM:

Pipe Support AF-005-H-002 , Auxiliary Feedwater System

A. PREPARATION BY GA INITIATOR:

1. WHICH OF THE FIRST TWO POTENTIAL FINDING CLASSIFICATION CRITERIA APPLIES TO THIS PFR?

1 ☐ , 2 ☐ ,

2. IN WHAT WAY MIGHT A SUBSTANTIAL SAFETY HAZARD BE CREATED AS A RESULT OF THE VIOLATION, DISCREPANCY OR ERROR (IF 1 OR 2 ABOVE WAS CHECKED)?:

3. OTHER COMMENTS:

This was a documentation error. This support is located on a short piping segment between two parallel pipes spaced 1'-9" apart. Obviously it must in reality be situated roughly between the parallel runs. Hence, the change to 8 13/16 . Failure to specify that the change was applicable to Unit 1, as well as 2 & 3, was an oversight.

PREPARED BY: R. D. Phelps for C. F. Dahms *R.D. Phelps* DATE: 10-5-82

B. PREPARATION BY GA TASK LEADER:

1. COMMENT ON ABOVE REPLIES:

Concur with Initiator's impact assessment. No safety impact.

2. DOES EVIDENCE EXIST OF MULTIPLE SIMILAR VIOLATIONS, DISCREPANCIES OR ERRORS? IF SO, LIST RELEVANT PFR NO'S:

N/A

3. IF POTENTIAL FINDING CLASSIFICATION CRITERIA 3, 4, OR 5 APPLIES, STATE WHICH ONE:

3 ☐ , 4 ☐ , 5 ☐

N/A

4. WHAT IS YOUR JUDGEMENT OF THE LIKELIHOOD OF MULTIPLE SIMILAR VIOLATIONS, DISCREPANCIES OR ERRORS ACTUALLY CREATING A SUBSTANTIAL SAFETY HAZARD - AND OF WHAT NATURE?

Not likely

5. OTHER COMMENTS:

Note Corrective Action implemented by APS

PREPARED BY:

R.D. Phelps

DATE:

10/6/82

POTENTIAL FINDING REPORT
PVNGS QUALITY ASSURANCE VERIFICATION

PFR NO. 2426-PFR -069 REVISION Issue A

A. PREPARATION BY GA INITIATOR

AFFECTED ITEMS:

Cable Tray Support Number EZAIDH33

1 per

Unit 1

REQUIREMENT REFERENCE DOCUMENTS:

13-E-ZAC-037 Rev. 5

(attachment 1)

BASIC REQUIREMENT:

Installation of support be consistent with Design Drawings.

DESCRIPTION OF POTENTIAL FINDING:

The drawing on 13-E-ZAC-037, Rev. 5 shows the support should be installed straight and perpendicular to the wall. Pictures 2-4 show that the free edge of the support has been forced out of position. The measurements made showed that the free edge of the support was displaced 1 3/8" out of perpendicular. The resulting displacement will induce bending moments into the support that have not been considered in the analysis.

(* Attachment 2)

PREPARED BY:

P. R. Rimmer

DATE:

8/17/82

USE THE SPACE BELOW TO DOCUMENT ANY RE-REVIEW ACTION TAKEN BY INITIATOR ON THIS PFR.

SIGNATURE:

DATE:

B. REVIEW BY GA TASK LEADER

PFR NO. 2426-PFR

- 069

REVISION

Issue A

☐ REQUEST RE-REVIEW
REASONS:

BY:

DATE:

☒ AGREE PFR IS VALID/INVALID

☐ DISAGREE WITH INITIATOR
REASONS:

BY:

DATE:

BY:

DATE:

C., D. SEE ATTACHED SECTIONS C AND D (PAGE 3)

E. RECOMMENDATION BY FINDINGS REVIEW COMMITTEE

ADDITIONAL INFORMATION REQUIRED

DEFINITION: ☒ ADEQUATE ☐ INADEQUATE
VALIDITY: ☐ VALID ☒ INVALID
CLASSIFICATION: ☐ OBSERVATION ☐ FINDING

JUSTIFICATION

CLASSIFICATION CRITERION NO. RESULTING IN "FINDING" _____

COMMENT ON "OBSERVATION" OR "FINDING" CLASSIFICATION:

BY:

DATE: 10/14/82

BY:

DATE:

F. GA PROJECT MANAGER

☒ ACCEPT
☐ REJECT

BY:

DATE: 10-14-82

C. REVIEW BY ORIGINAL DESIGN ORGANIZATION

PFR NO. 069

REVISION A

☐ AGREE ☒ DISAGREE THAT POTENTIAL FINDING IS ACCURATEBY: [Signature] DATE: 10-4-82

IF THE "DISAGREE" BLOCK WAS CHECKED, USE THE SPACE BELOW TO PROVIDE INFORMATION THAT WOULD IMPROVE ACCURACY OR DEFINITION. (USE BACK FOR ADDITIONAL SPACE.)

Cable Tray Support EZAI DH33 was installed and inspected in May, 1979, to drawing 13-E-ZAC-043, Revision 9. Note 14 stated, "When field conditions require, the details shown may be altered to fit, provided there is no loss of strength, stability or rigidity". The condition described in this PFR is acceptable under this criteria. Since this condition has been questioned by the Torrey Pines evaluation an engineering evaluation was conducted. This evaluation determined that the very small horizontal load caused by this condition causes a slight bending only in the vertical member in the Y direction. By inspection, the additional stresses from this condition will not affect the design of the support.

Additionally, since there have been many changes to notes on drawings, and as an additional check to ensure raceway supports are adequate, an additional walkdown of all Class 1E raceway supports is being conducted by engineering and QC. This walkdown has been directed by DCP 1SC-ZJ-083.

D. REVIEW BY GA INITIATOR

☒ AGREE PF IS INVALID

REASON: *Since the vertical leg is out of plant additional by only 1/50 and the loads are a small percentage of the design loads, the vertical member will be adequate. The horizontal members are straight not bent and therefore the only additional loads will be twisting moments which are also very small. The support*

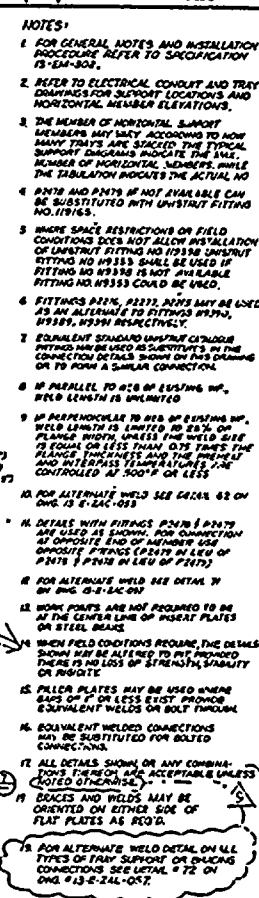
BY: [Signature] DATE: 10/13/82

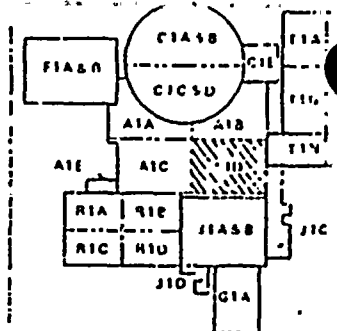
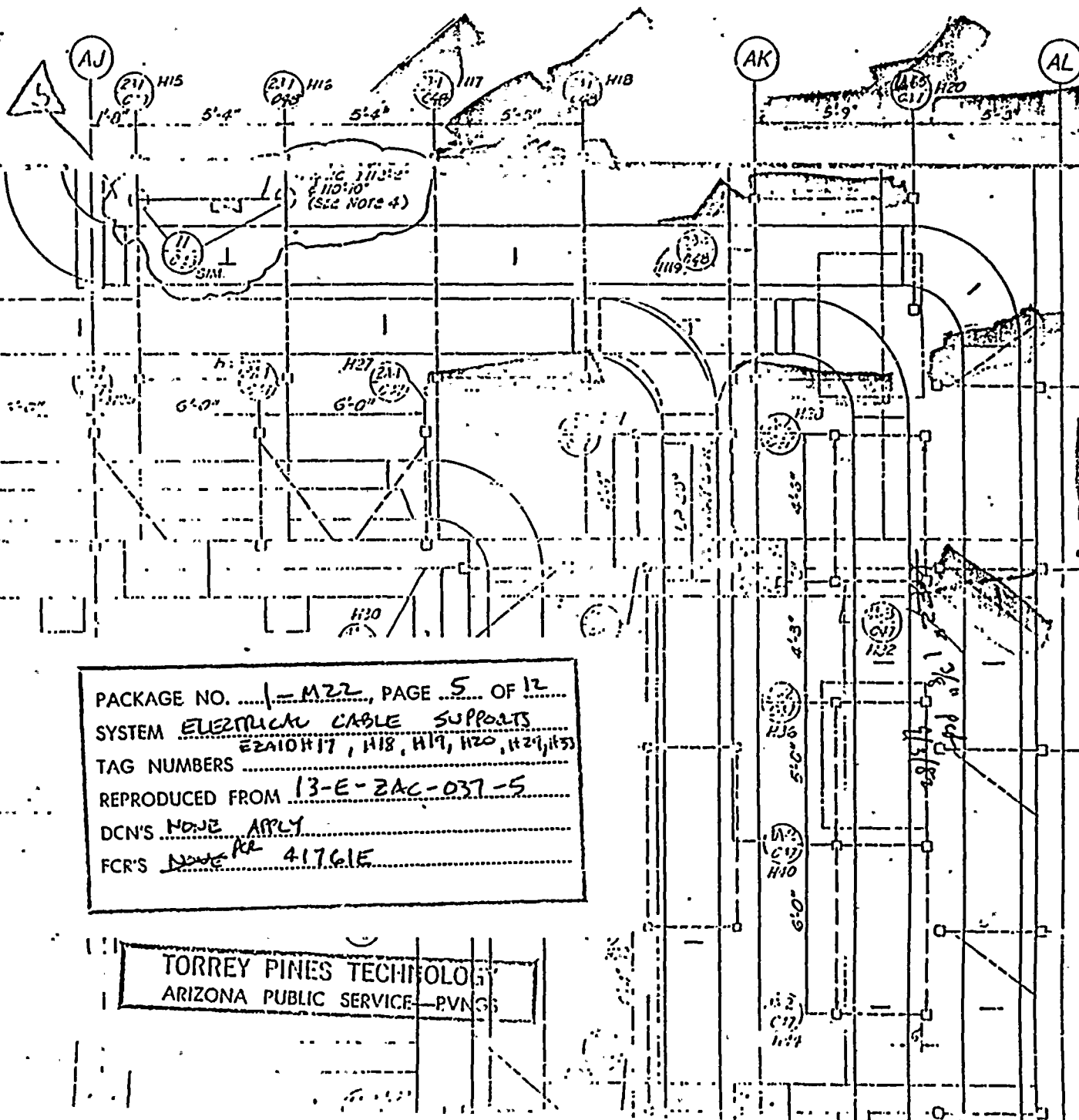
REVIEW BY GA TASK LEADER

☒ AGREE PF IS INVALID

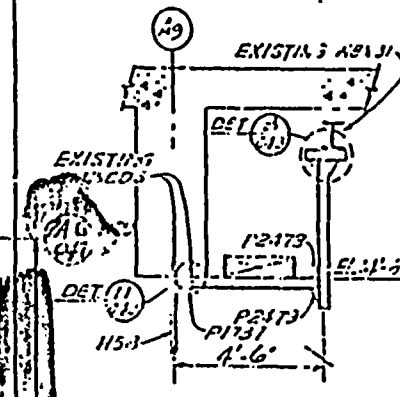
REASON: *Installed configuration is in accordance with Note 14 of Dwg. 13-E-ZAC-043. Recommend PFR be invalidated.*

BY: [Signature] DATE: 10/13/82

[illegible]



KEY PLAN - LEVEL 1



SECT. A

H33 Support found skewed

PACKAGE NO. 1-M22, PAGE 5 OF 12
 SYSTEM ELECTRICAL CABLE SUPPORTS
 TAG NUMBERS E2A10H17, H18, H19, H20, H21, H22
 REPRODUCED FROM 13-E-2AC-037-5
 DCN'S NONE APPLY
 FCR'S NONE RE 41761E

TORREY PINES TECHNOLOGY
 ARIZONA PUBLIC SERVICE - PVNGS

IMPORTANT
 THIS DRAWING MUST BE
 WITH THE FOLLOWING DO
 (REFER TO DOCUMENT FOR)

DCN'S

POTENTIAL FINDING REPORT (CONT'D)

PFR NO. 2426-PFR-069

Issue A
REVISION

PREPARED BY GA INITIATOR/TASK LEADER

PAGE NO. 6

PHOTO 1 - IEZAIDH29

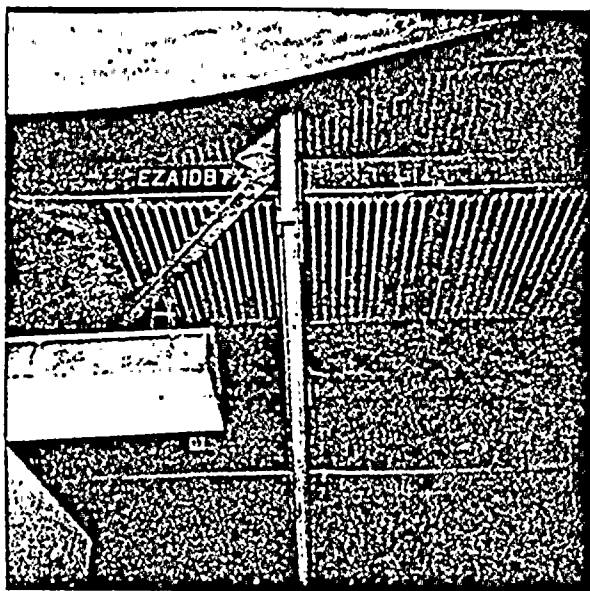
SHOWS CORRECT ALIGNMENT OF BRACE WITH
RESPECT TO THE WALL AND CABLE TRAY

PHOTO 3 - IEZAIDH33

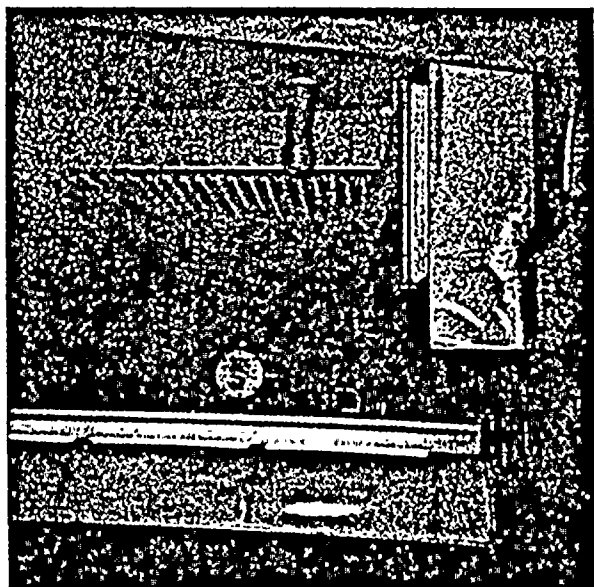
SHOWS MISALIGNMENT OF SUPPORT RELATIVE
TO CABLE TRAY

PHOTO 2 - IEZAIDH33

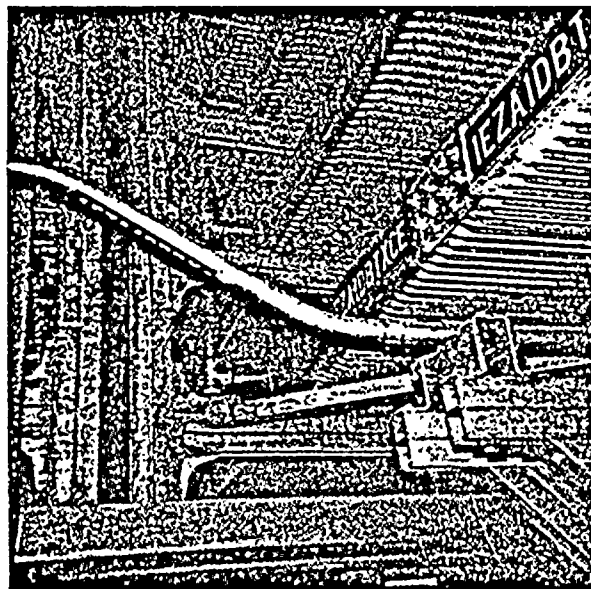
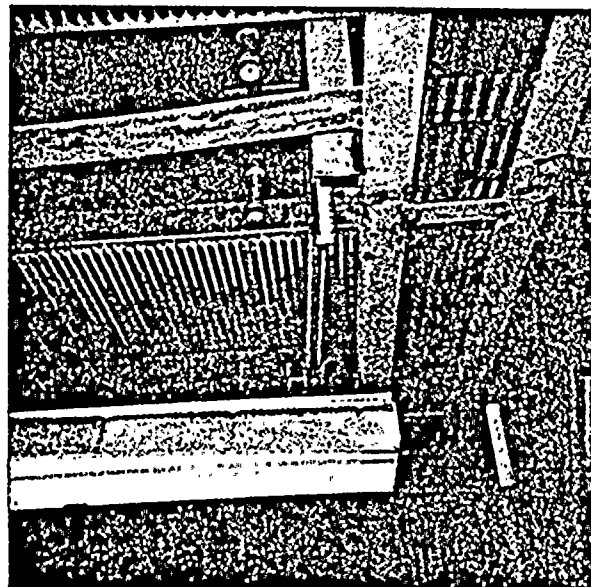
SHOWS LONGITUDINAL BRACE THAT HOLDS
SUPPORT OUT OF ALIGNMENT

PHOTO 4 - IEZAIDH33

SHOWS MISALIGNMENT OF SUPPORT RELATIVE
TO CABLE TRAY AND WALL.

POTENTIAL FINDING REPORT
PVNGS QUALITY ASSURANCE VERIFICATION

PFR NO. 2426-PFR -070 REVISION Issue A

A. PREPARATION BY GA INITIATOR

AFFECTED ITEMS:

Pipe Line SI-072-FCBA-12" , Unit 1

REQUIREMENT REFERENCE DOCUMENTS:

Dwg. 13-P-SIF-208 Rev. 13 (attachment 2)
FCR 11929-P (attachment 1)
Spec. 13-PM-204 Rev. 10

BASIC REQUIREMENT:

Piping should be installed to within $\pm 1/2"$ of the dimensions shown on the piping drawings (Spec 13-PM-204 Rev. 10).

DESCRIPTION OF POTENTIAL FINDING:

^C
PFR No. 11929-P changes a dimension from 8'6" to 8'3-1/2" for Unit 1 only. The actual dimension in the plant is 8'6", not 8' 3-1/2".

PREPARED BY:

C. Dams
C. Dams

DATE:

9/16/82

USE THE SPACE BELOW TO DOCUMENT ANY RE-REVIEW ACTION TAKEN BY INITIATOR ON THIS PFR.

SIGNATURE: _____

DATE: _____

B. REVIEW BY GA TASK LEADER

PFR NO. 2426-PFR 070

REVISION ^{Issue} A☐ REQUEST RE-REVIEW

REASONS:

BY: _____ DATE: _____

☒ AGREE PFR IS VALID/INVALID☐ DISAGREE WITH INITIATOR

REASONS:

BY: Boyer DATE: 9/17/82

BY: _____ DATE: _____

C., D. SEE ATTACHED SECTIONS C AND D (PAGE 3)

E. RECOMMENDATION BY FINDINGS REVIEW COMMITTEE

DEFINITION: ☒ ADEQUATE ☒ INADEQUATE *SAK 10/12/82*VALIDITY: ☒ VALID ☐ INVALIDCLASSIFICATION: ☒ OBSERVATION ☐ FINDING

JUSTIFICATION

CLASSIFICATION CRITERION NO. RESULTING IN "FINDING" _____

COMMENT ON "OBSERVATION" OR "FINDING" CLASSIFICATION:

*Incorrect documentation of as built dimensions
but tolerance is acceptable.*

ADDITIONAL INFORMATION REQUIRED

*PFR says tolerance is
 $\pm 1/2"$. NCR says
 $\pm 2"$. Which is
correct.*

BY: S. A. Kouz DATE: 10/12/82BY: S. A. Kouz DATE: 10/11/82

F. GA PROJECT MANAGER

☒ ACCEPT☐ REJECTBY: [Signature] DATE: 10-13-82

2426-PFR-070

Attachment 1

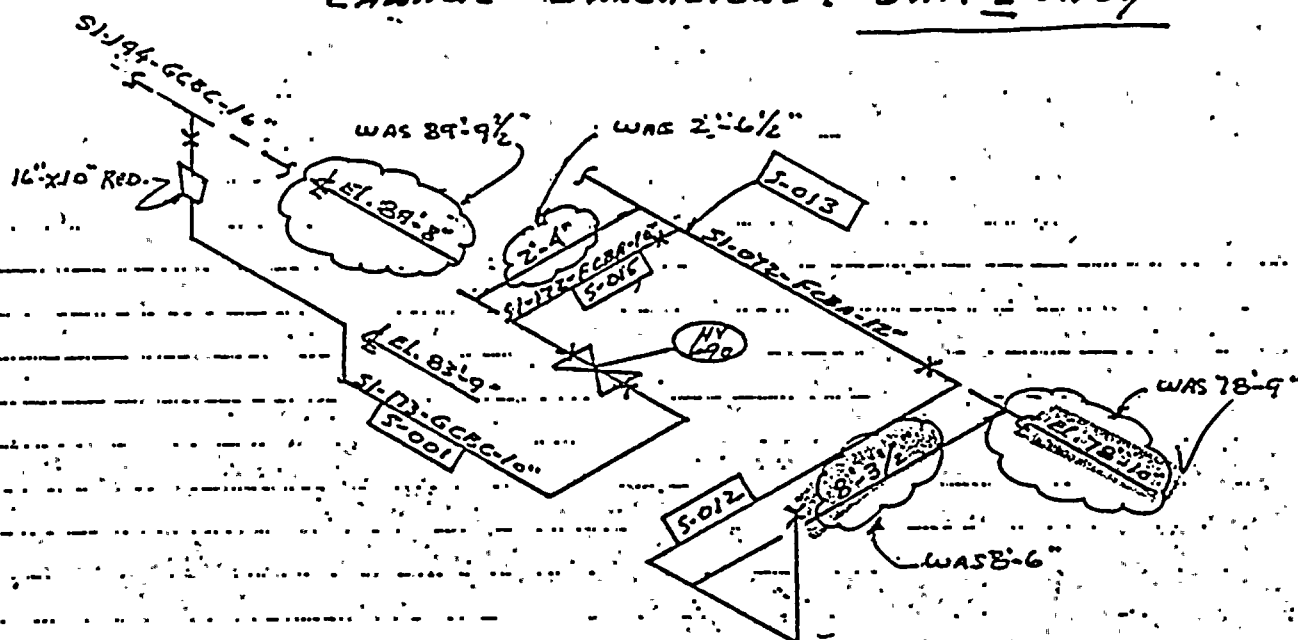
MOC 127896

Page 3

1438

PALO VERDE NUCLEAR GENERATING STATION		1. PAGE <u>1</u> OF <u>1</u>	2. NO. <u>11,929-P</u>	13A. DCN NO. <u>NA</u>
FIELD CHANGE REQUEST JOB NO. 10407		QUALITY CLASS <u>Q</u>	3. MO DAY YR <u>10 1 80</u>	13B. SCN NO. <u>NA</u>
4. REF DWG OR SPEC <u>13-P-SIF-208</u>	REV <u>10</u>	5. TITLE <u>AUX. BLDG. - 150 - SAFETY INJ. SYS. - LPSI & CONT. SPRAY DISCH. TRUB</u>		
6. DESIGN ORIGIN: <input checked="" type="checkbox"/> ENGINEERING <input type="checkbox"/> SUPPLIER (IDENTIFY BY NAME)		7. <input checked="" type="checkbox"/> UNIT 1 <input type="checkbox"/> UNIT 2 <input type="checkbox"/> UNIT 3 <input type="checkbox"/> COMMON		
8. EXISTING CONDITION <u>SPEC. 13-PM-204 PARA. 8.2.2 REQUIRES AN FCR TO DOCUMENT LINE LOCATION BEYOND TOLERANCES SPECIFIED. SPOOL SI-173-S001 & SI-172-S015 ARE 2 1/2" OFF GLFV. WAS 10-187 SPOOLS SI-072-S012 & S013 ARE 2 1/2" TOO FAR WEST. DUE TO INSTALLATION TOLERANCES OF PENET. 17 1/2" AND LINES SI-194-ECBC-16" & SI-155-CCBA-12" AND ABOVE</u>				
9. CHANGE REQUEST/SKETCH <u>LISTED SPOOLS.</u>				

CHANGE DIMENSIONS. UNIT 1 ONLY



10. REVIEWED BY: Trend B

J E Hawley

10/2/80

11.

PREPARED BY: A. G. Tomson

PACKAGE NO. 1-M15 PAGE 140 OF 42
 SYSTEM Safety Injection
 TAG NUMBERS Line SI-072-FCBA-12"
 REPRODUCED FROM FCR 11929-P
 DCN'S NA
 FCR'S ref. dwg 13-P-SIF-208 rev. 10

APPROVAL OF FIELD DISPOSITION:

C. J. Miller

PROJECT FIELD ENGINEER

10/1/80
DATE

ED

CLEAR GROUP SUPERVISOR (IF REQUIRED)

DATE

10-LISTED P&I AND SINGLE LINE DWG
QUALITY CLASS Q AND R SPECIFICATIONS

OCT 23 1980

INSTRUMENT, SURVEY, DISCIPLINE, AND RECONSTRUCTION

MANAGER

☐ COST TREND ENGINEER

TORREY PINES TECHNOLOGY
ARIZONA PUBLIC SERVICE-PVNGS

SPECIFICATION
FOR
FIELD FABRICATION AND INSTALLATION
OF
NUCLEAR PIPING SYSTEMS
FOR THE
ARIZONA PUBLIC SERVICE COMPANY
PALO VERDE NUCLEAR GENERATING STATION
UNITS 1, 2, AND 3

QUALITY CLASS Q

SPECIFICATION NUMBER 13-PM-204

PROJECT FILE
PFR-070
pg. 5

RECEIVED
APR 26 1982

CONSTRUCTION
PUNCC

JOB NUMBER 10407
BECHTEL POWER CORPORATION
NORWALK, CALIFORNIA

△ ₆	5-25-79	Incorporated SCN 1399 (MOD) into Section 5.3.1; SCN 1300 (MOD) to Add Sections 6.3.8, 9.1.10, 9.1.11, and 9.4.7; SCN 1349 (MOD) to Add Section 12.3.15. Combined Sections 7.0 and 8.0 into Section 7.0. Added New Section 8.0. Attachments E and F, and Sections 1.2.1, j, and k, 2.1.j, 2.3.k. Incorporated SCN 1653. Deleted SCN 1490 and Revised Section 12.1.1. SCN 1606 (MOD) in Section 12.4.1 and 12.4.2. SCN 1642 in
△		Section 15.5 and Revised Attachment D; SCN 1640 in Section 1.1.d, 5.8.1, 6.1.2, 6.1.3, 6.2 and 12.4. SCN 1470 (MOD) in Section 12.3.16.
△		SCN 1449 in Section 12.5.2.1; SCN 1343 in Sections 12.3.13, 12.3.13.1, 12.3.13.2, 12.3.13.3, 12.4.1, 12.4.2, 12.5, 12.5.1, 12.5.2, 12.5.2.1,
△		12.5.2.2, 12.5.3, 12.5.3.1, 12.5.3.2, 12.5.3.3 and 12.5.3.4. Revised Sections 5.4.3.a, 7.1.1, 7.1.2, 7.5.2, 8.1, 8.3.1.a, 8.3.2.a, 8.5.1.d,
△		8.5.2.b and c, 9.4.3, 9.4.6, 12.2.9.C, 12.3.3, 12.3.5.1, 12.3.5.4 and 13.2. Added Sections 8.3.2a and 12.3.17. Incorporated SCN 1702.
△		Deleting Section 12.2.10; SCN 1708 (MOD). Adding Section 7.4.10 and Attachment G; Added Revised Appendix 40; and General Revision
△ ₅	10-2-78	Incorporated SCNs: 1022 (Mod), 1049, 1164, and 1176
△ ₄	5-19-78	Incorporated SCNs 815 (Mod), 835 (Mod), 902, 942, 943 and 944 Into Sections 6.3.3, 9.1.3, 9.4.4, 12.3.1, 12.3.2, 12.3.5.1, and 12.3.5.2.
△		Added Sections 6.3.5, 7.5, and 14.0; Renumbered Sections 9.2 thru 9.2.3 to be 9.1.7 thru 9.1.9; Deleted Section 9.3.
△ ₃	1-16-78	Incorporated SCN Nos. 554, 543, 740, 742, and Added Attachment "C". Revised Section 12.3.5.1.
△ ₂	6-1-77	Incorporated SCN Nos. 278, 345, 409, 410
△ ₁	10-27-76	Added Sections 2.5, 7.1.4 and 12.0, Revised Sections 1.0, 2.0, 5.0, 6.0, 8.2, 9.1.3, 13.0 and Added 4X and 40. Incorporate SCN No. 108, 17
△ ₀	6-17-76	Issued for Construction
REV. NO.	DATE	REVISIONS

7	10-30-79	Incorporated SCNs 1727, 1772, 1820, 1829, 1833, 1866 (MOD), and 1885.
		1901, 1925, and 1963. Revised Sections 9.4.3, 12.2.9a, 12.2.9b,
		12.2.9c, 12.3.3, and 12.4.1. Deleted Sections 12.2.5a, 12.2.5b,
		12.2.5c and 12.2.11. Added Sections 9.1.5.1, 12.2.9d, 12.3.1e,
		and 12.3.19. Added Attachment H. Revised Appendix 4Q.
8	4-10-80	Incorporated SCNs 1978, 2028 (MOD), 2029, 2032 (MOD), 2095, 2096 (MOD),
		2111, 2133, 2138, and 2190 (MOD). Revised Sections 8.3.1.a, 12.3.7,
		12.3.15, 12.3.18, and 12.3.19. Added Sections 5.3.3, 5.5.3, 8.3.2d,
		8.3.4, 12.3.20, 12.4.3, 16.0, and 16.1. Deleted Section 12.3.16c.
		Added Attachments I, J, and K.
9	8-27-81	Incorporated SCNs 2257, 2270, 2284 (MOD), 2307, 2332 (MOD), and 2351
		(MOD). Revised Sections 5.4.3, 5.4.3b, 12.2.2, 12.3.4, 12.3.5.3, 12.3.8,
		12.3.14 and 12.4.3. Added Sections 5.3.4, 12.2.12, 12.3.8a, 12.3.5b,
		12.3.21, 12.3.22, 12.3.23, 12.3.24, 12.5.2.2c and 12.5.2.2d. Revised
		Attachment J. Added Attachment L. Revised Appendix 4X.
		Incorporated SCNs: 2478, 2501, 2546, 2607, 2622, 2674, 2442 (MOD), 2425,
		2629 (MOD), 2636 (MOD), 2684 (MOD), 2692 (MOD), 2680 (MOD), 2695 (MOD),
		2682, 2401, 2559, 2496, 2560, 2627, 2565, 2710 (MOD), 2712 (MOD).
		Revised Sections: 7.2.1, 8.2.2, 9.1.9, 12.2.4, 12.3.13, 12.3.13.3,
		12.3.20, 12.4.2. Added Sections: 5.5.4, 5.8.5, 6.3.9, 12.2.13,
		12.2.14, 12.3.25, 12.3.26, 12.3.27, 12.3.28, 12.3.29, 12.3.30, 12.6.
		Revised Attachments: G, H, I. Added Attachments: M, N, O, P, Q,
		R, S. Revised Appendix 4Q.
10	4-8-82	Incorporated SCNs 2795 (MOD), 2819, 2851 (MOD), 2875, 2931 (MOD), 2932,
		2938, 2941 (MOD), 2943 (MOD). Revised Attachment H, Section 1.0,
		Attachments J, M, and S. Added Attachments T, U, and V. Revised
		Sections 5.8.5, 7.4.9, 8.3.1, and 12.3.31. Added Sections 5.8.6,
		5.8.7, and 12.1.6.
REV. NO	DATE	REVISIONS

7.5 Installation of Field-Fabricated Piping

7.5.1 The requirements of the Code and this specification shall be applied to the installation of field-fabricated piping.

7.5.2 The installation of piping in nominal pipe sizes 2 inches and smaller, shall be as shown on the engineering drawings.

7.5.3 Tubing shall be cut square and burrs shall be removed. All tube fittings shall be installed in accordance with the manufacturer's recommendations.

8.0 ERECTED POSITION TOLERANCES FOR PIPING AND RELATED COMPONENTS

8.1 This section defines the tolerances allowed for variation from design position in the erection of piping systems, requirements for piping closure fit-up, and the procedures which shall be followed to control these operations.

8.2 Piping System Tolerances

8.2.1 Erected position tolerances for a system or a component may be defined as those permissible variations from the position established by the engineering drawings. Where variations occur and the variations are within the specified tolerances (and the limitations of section 8.4), the system or component shall be considered to be erected as designed.

8.2.2 A Field Change Request (FCR) is not required to permit variations within these tolerances. Prior to erection, an FCR shall be issued to document changes when required tolerances will be exceeded. As-built systems which exceed tolerances not covered by design requirements as contained in specifications, drawings or FCRs shall be documented as Nonconformance Reports (NCR) for disposition.

8.3 Allowable Variations

8.3.1 The following position tolerances are acceptable for piping systems for all services:

- a. All piping shall be installed within $\pm 1/2$ inch of design position except where the design clearance is greater than 6 inches relative to other maximum outside diameter (pipe OD plus twice the insulation thickness), conduit, equipment, structure, and other appurtenances. Where the design clearance is greater than 6 inches, the following variations shall apply, except for Nuclear Class 1:

1. Piping, 2-1/2 inches and larger may be installed within ± 2 inches of design position.
2. Piping 2 inches and smaller may be installed within ± 4 inches of the design position.

INFORMATION
ONLY

3. Where piping passes through a sleeve or wall penetration, the piping shall be located within $\pm 1/2$ inch of the ϵ of the sleeve or wall penetration.
4. Where piping passes through a block out, the piping shall be installed within $\pm 1/2$ inch of design location.
- b. The following requirements apply to those piping penetrations requiring sealant installation to prevent radiation streaming, air, water, smoke or noxious gas leakage, or flame propagation into critical areas of the plant.
 1. The minimum clearance between the pipe OD (including insulation when applicable) shall be 0.25 inch. Specific engineering approval is required prior to installing sealant when the clearance specified is less than 0.25 inch.
 2. Sealant shall be installed in accordance with Bechtel approved vendor procedures.

INFORMATION
ONLY

C. REVIEW BY ORIGINAL DESIGN ORGANIZATION

PFR NO.

070, pg. 9

REVISION A

☒ AGREE ☐ DISAGREE THAT POTENTIAL FINDING IS ACCURATE

BY:

U. Sch

DATE: 10-4-82

IF THE "DISAGREE" BLOCK WAS CHECKED, USE THE SPACE BELOW TO PROVIDE INFORMATION THAT WOULD IMPROVE ACCURACY OR DEFINITION. (USE BACK FOR ADDITIONAL SPACE.)

NCR PA-4689 has been generated to document and obtain resolution for this discrepancy. A copy of the NCR is attached.

D. REVIEW BY GA INITIATOR

☐ AGREE PF IS INVALID

REASON:

BY:

DATE:

REVIEW BY GA TASK LEADER

☐ AGREE PF IS INVALID

REASON:

BY:

DATE:

October 12, 1982

NOTE: In NCR PA-4689, APS stated that a $\pm 2"$ tolerance was being exceeded in their piping construction which was contradictory to the $1/2"$ measurement stated in PFR-070. The $2"$ tolerance is acceptable since it is an exception to specification No. 13-PM-204 when design clearances are greater than $6"$.

C. F. Dahms 10/12/82
C. F. Dahms Date

STATUS: AA

VENDOR: HPA

PALO VERDE NUCLEAR GENERATING STATION				NONCONFORMANCE REPORT		PA-4689 NO. _____		PAGE 1 OF 2	
1. UNIT 1	2. MO DAY YR 10 | 2 | 82	3. DRAWING/PART NO. 13PSIF 208	REV.	4. ITEM DESCRIPTION PIPE SPOOLS	5. ITEM LOCATION AUX - EAST W/RAILROAD				
6. Q CLASS Q2	7. STARTUP SYSTEM NO. RC01/S107	8. SERIAL NO. 15I1555001 15I0725012	9. CONTRACTOR/SUPPLIER BECHTEL		10. P.O. OR SPEC NO. 13PM204-11	11. ASME AUTHORIZED INSPECTION REQ'D. <input checked="" type="checkbox"/> YES <input type="checkbox"/> NO			
12. DESCRIPTION LIST IN ORDER: NO. PCS., DWG/SPEC REQMT., PRESENT CONDITION	16. FIELD ENGR DECISION			17. <input type="checkbox"/> FIELD RECOMMENDED DISPOSITION <input type="checkbox"/> ENGINEER CONCURRENCE REQ'D. <input type="checkbox"/> ENGINEER DISPOSITION REQ'D.					
15I0725012 REFERENCE PIECE #515I1555001.									
SPEC 13PM204 PARA. 8.2.2									
REQUIRES THAT FCRS BE									
GENERATED PRIOR TO ERECTION									
TO DOCUMENT VARIATIONS OUT-									
SIDE OF THE ±2" TOLERANCE, AND									
AN NCR BE GENERATED TO									
DOCUMENT AS-BUILT SYSTEMS									
WHICH EXCEED THIS TOLERANCE.									
1 FCR# 8816P AND WAS GENERATED									
PRIOR TO ERECTION OF SPOOL									
13. REPORTED BY: W. SHOAF		15. INSPECTION/VALIDATION/REVIEW DATE			15A. REPORTABILITY EVALUATION: NOT REPORTABLE: <input type="checkbox"/> OR DER NO. _____		REVIEWERS: R/E _____ QA _____ DATE _____		
19. ACCEPTANCE OF REWORK/REPAIR QC ENGR _____ DATE _____ AUTHOR. INSP _____ DATE _____				18. DISPOSITION CONCURRENCE PROJ FIELD ENGR _____ DATE _____ NUCLEAR GROUP SUPV _____ (IF REQUIRED) DATE _____ GROUP SUPV _____ DATE _____ PROJ ENGR _____ DATE _____ AUTHORIZED INSPECTOR _____ DATE _____ QA ENGR _____ DATE _____					
14. ASSUMED CAUSE OF DISCREPANCY INSTALLATION ERROR INITIATOR <u>Will Shoaf</u> DATE <u>10-2-82</u>									

PRR-070 pg. 11

CONTINUATION SHEET

PALO VERDE NUCLEAR GENERATING STATION				NONCONFORMANCE REPORT		PA-4689		PAGE 2 OF 2	
1. UNIT	2. MO DAY YR	3. DRAWING/PART NO.	REV	4. ITEM DESCRIPTION	5. ITEM LOCATION				
1	9 2 82	13 PSIF 203		PIPE SPOOL	AUX - EAST WRAPAROUND				
ITEM	12. DESCRIPTION LIST IN ORDER: NO. PCS., DWG/SPEC REQMT., PRESENT CONDITION			16. FIELD ENGR DECISION	17. <input type="checkbox"/> FIELD RECOMMENDED DISPOSITION <input type="checkbox"/> ENGR DISPOSITION REQ'D <input type="checkbox"/> ENGINEER CONCURRENCE REQUIREMENT				
	1-SI-15.5-5001, AND MCN 1531								
	WAS GENERATED PER THE								
	REQUIREMENTS OF WRAP/QCI 202.0								
	TO EXECUTE THE WORK PER THIS								
	FCR. THE MCN HAS NOW BEEN								
	CLOSED, BUT THE PRESENT								
	INSTALLATION IS NOT CONSISTENT								
	WITH THE FCR/MCN. SEE SHEET								
	FOR AS INSTALLED CONFIGURATION.								
	IN ADDITION VALVE ASSEMBLY V-827								
	IS NOT INSTALLED PER THE ELEVATION								
	SHOWN ON THE LATEST REV OF THE								
	ISO.								
	2. FCR 11,929-P WAS GENERATED PRIOR								
	TO ERECTION OF SPOOL 1-SI-073-5012								
	REVISING A DIMENSION FROM								
	8'-0" TO 8'-3 1/2". CONTRARY TO THIS								
	THE AS-INSTALLED DIMENSION IS								
	8'-0", SEE SHT.								

IMPACT ASSESSMENT

PFR NO. 2426-PFR-070 REVISION Issue A

AFFECTED ITEM:

Pipe Line SI-072-FCBA-12" Unit 1

A. PREPARATION BY GA INITIATOR:

1. WHICH OF THE FIRST TWO POTENTIAL FINDING CLASSIFICATION CRITERIA APPLIES TO THIS PFR?

1 ☐, 2 ☐,

2. IN WHAT WAY MIGHT A SUBSTANTIAL SAFETY HAZARD BE CREATED AS A RESULT OF THE VIOLATION, DISCREPANCY OR ERROR (IF 1 OR 2 ABOVE WAS CHECKED)?:

None

3. OTHER COMMENTS: The discrepancy is minor and would not change the analysis. It seems that this pipe location had a field change made (2-1/2 inches) which actually was not needed. The original dimension was alright.

PREPARED BY: C. F. Dahms

C. F. Dahms

DATE: 10-8-82

B. PREPARATION BY GA TASK LEADER:

1. COMMENT ON ABOVE REPLIES:

Concur with Initiator's comments. No safety impact.

2. DOES EVIDENCE EXIST OF MULTIPLE SIMILAR VIOLATIONS, DISCREPANCIES OR ERRORS? IF SO, LIST RELEVANT PFR NO'S:

PFR - 071

3. IF POTENTIAL FINDING CLASSIFICATION CRITERIA 3, 4, OR 5 APPLIES, STATE WHICH ONE:

3 ☐, 4 ☐, 5 ☐ *N/A*

4. WHAT IS YOUR JUDGEMENT OF THE LIKELIHOOD OF MULTIPLE SIMILAR VIOLATIONS, DISCREPANCIES OR ERRORS ACTUALLY CREATING A SUBSTANTIAL SAFETY HAZARD - AND OF WHAT NATURE?

Not likely - based on walkdown experience, this is an "exception rather than the rule".

5. OTHER COMMENTS:

PREPARED BY: *[Signature]*

DATE: 10/11/82

POTENTIAL FINDING REPORT
PVNGS QUALITY ASSURANCE-VERIFICATION

PFR NO. 2426-PFR -071 REVISION Issue A

A. PREPARATION BY GA INITIATOR

AFFECTED ITEMS:

Pipe Line SI-155-CCBA-12" , Unit 1

REQUIREMENT REFERENCE DOCUMENTS:

Dwg 13-P-SIF-208 Rev. 13 (attachment 2)
FCR 8816-P (attachment 1)
Spec. 13-PM-204, Rev. 10.

BASIC REQUIREMENT:

Dimensions on the piping should be accurate in the plant to within $\pm 1/2"$
(Spec. 13-PM-204 Rev. 10)

DESCRIPTION OF POTENTIAL FINDING:

1. FCR 8816-P indicates a change in elevation of weld W002 (bottom of 90" bend) from 88' 3-1/2" to 88' 0-3/4". The actual dimension in the plant is 88' 3-1/2", not 88' 0-3/4".

2. The 1" valve 827, between the 45° Bend and the 90° bend is indicated to be at el. 85' 9" but is actually 85' 11-3/4" in the plant.

PREPARED BY: C. Dahms *[Signature]* DATE: 9/16/82

USE THE SPACE BELOW TO DOCUMENT ANY RE-REVIEW ACTION TAKEN BY INITIATOR ON THIS PFR.

SIGNATURE: _____ DATE: _____

B. REVIEW BY GA TASK LEADER

PFR NO. 2426-PFR - 071

REVISION ^{Issue A}☐ REQUEST RE-REVIEW

BY: _____ DATE: _____

REASONS:

☒ AGREE PF IS VALID/~~INVALID~~☐ DISAGREE WITH INITIATOR

REASONS:

BY: Proprietor DATE: 9/17/82

BY: _____ DATE: _____

C., D. SEE ATTACHED SECTIONS C AND D (PAGE 3)

E. RECOMMENDATION BY FINDINGS REVIEW COMMITTEE

DEFINITION:

☒ ADEQUATE☒ INADEQUATE

VALIDITY:

☒ VALID☐ INVALID

CLASSIFICATION:

☒ OBSERVATION☐ FINDING

JUSTIFICATION

CLASSIFICATION CRITERION NO. RESULTING IN "FINDING" _____

COMMENT ON "OBSERVATION" OR "FINDING" CLASSIFICATION:

*In correct documentation of as built dimensions
but hardware is acceptable*

ADDITIONAL INFORMATION REQUIRED

*PFR say tolerance is
 $\pm 1/2"$, NCR say $\pm 2"$.
Which is correct?*

BY: S. D. Koutz DATE: 10/12/82BY: S. D. Koutz DATE: 10/11/82

F. GA PROJECT MANAGER

☒ ACCEPT☐ REJECTBY: MA Shuman DATE: 10-13-82

C. REVIEW BY ORIGINAL DESIGN ORGANIZATION

PFR NO. 071

REVISION A

☒ AGREE ☐ DISAGREE THAT POTENTIAL FINDING IS ACCURATE

BY: [Signature] DATE: 10-4-82

IF THE "DISAGREE" BLOCK WAS CHECKED, USE THE SPACE BELOW TO PROVIDE INFORMATION THAT WOULD IMPROVE ACCURACY OR DEFINITION. (USE BACK FOR ADDITIONAL SPACE.)

NCR PA-4689 has been generated to document and obtain resolution for this discrepancy. A copy of the NCR is attached.

D. REVIEW BY GA INITIATOR

☐ AGREE PF IS INVALID

REASON:

BY: _____ DATE: _____

REVIEW BY GA TASK LEADER

☐ AGREE PF IS INVALID

REASON:

BY: _____ DATE: _____

PFR NO. 071

REVISION A

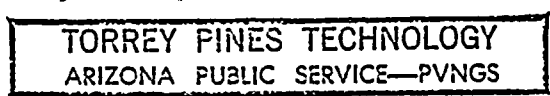
October 12, 1982

NOTE: In NCR PA-4689, APS stated that a ± 2 " tolerance was being exceeded in their piping construction which was contradictory to the $1/2$ " measurement stated in PFR-071. The 2" tolerance is acceptable since it is an exception to specification No. 13-PM-204 when design clearances are greater than 6". (Section 8.3.1)

C. F. Dahms 10/12/82
C. F. Dahms

PALO VERDE NUCLEAR GENERATING STATION		1. PAGE <u>1</u> OF <u>1</u>	2. NO. <u>8816-P</u>	3A. DCN NO. <u>NA</u>
FIELD CHANGE REQUEST JOB NO. 10407		QUALITY CLASS <u>Q</u>	3. MO DAY YR DATE <u>3 24 80</u>	13B. SCN NO. <u>NA</u>
4. REF DWG. OR SPEC <u>13-P-SIF-208</u>	REV <u>9</u>	5. TITLE <u>Aux. Bldg. ISO - S.I.S.</u>		
6. DESIGN ORIGIN: <input checked="" type="checkbox"/> ENGINEERING <input type="checkbox"/> SUPPLIER (IDENTIFY BY NAME)		7. <input checked="" type="checkbox"/> UNIT 1 <input type="checkbox"/> UNIT 3 <input type="checkbox"/> UNIT 2 <input type="checkbox"/> COMMON		
8. EXISTING CONDITION <u>DUE TO FABRICATION & INSTALLATION TOLERANCES OF</u> <u>PENETRATION #17 & LINE SI-072 & SI-155, SPOOL</u> <u>SI-155-S001 IS OUT OF ALIGNMENT AT WELD W-002</u> <u>WITH SPOOL SI-155-S002.</u>				
9. CHANGE REQUEST/SKETCH <u>CHANGE DIMENSIONS TO REFLECT</u> <u>AS BUILT CONDITION.</u>				
<p>RECEIVED APR 17 1980 CONSTRUCTION PVNGS</p>				
Per Discussion with Tony Arrellano 3-24-80				
10. REVIEWED BY: <u>Trend (B) - 2 15 4/14/80</u>		11. DESIGNED BY: <u>AR Thomson</u>		
13. BE		12. PACKAGE NO. <u>1-MIS</u> , PAGE <u>14</u> OF <u>42</u> SYSTEM <u>Safety Injection</u> TAG NUMBERS <u>Line SI-072-FCBA-12</u> REPRODUCED FROM <u>FCR 8816-P</u> DCN'S <u>NA</u> FCR'S ref. dwg. <u>13-P-SIF-208 rev 9</u>		
DISTRIB		14. AL OF FIELD DISPOSITION: <u>AK Trust</u> <u>4/5/80</u> PROJECT FIELD ENGINEER DATE <u>NA</u> GROUP SUPERVISOR (IF REQUIRED) DATE <u>NA</u> 15. 16. 17. 18. 19. 20. 21. 22. 23. 24. 25. 26. 27. 28. 29. 30. 31. 32. 33. 34. 35. 36. 37. 38. 39. 40. 41. 42. 43. 44. 45. 46. 47. 48. 49. 50. 51. 52. 53. 54. 55. 56. 57. 58. 59. 60. 61. 62. 63. 64. 65. 66. 67. 68. 69. 70. 71. 72. 73. 74. 75. 76. 77. 78. 79. 80. 81. 82. 83. 84. 85. 86. 87. 88. 89. 90. 91. 92. 93. 94. 95. 96. 97. 98. 99. 100. 101. 102. 103. 104. 105. 106. 107. 108. 109. 110. 111. 112. 113. 114. 115. 116. 117. 118. 119. 120. 121. 122. 123. 124. 125. 126. 127. 128. 129. 130. 131. 132. 133. 134. 135. 136. 137. 138. 139. 140. 141. 142. 143. 144. 145. 146. 147. 148. 149. 150. 151. 152. 153. 154. 155. 156. 157. 158. 159. 160. 161. 162. 163. 164. 165. 166. 167. 168. 169. 170. 171. 172. 173. 174. 175. 176. 177. 178. 179. 180. 181. 182. 183. 184. 185. 186. 187. 188. 189. 190. 191. 192. 193. 194. 195. 196. 197. 198. 199. 200. 201. 202. 203. 204. 205. 206. 207. 208. 209. 210. 211. 212. 213. 214. 215. 216. 217. 218. 219. 220. 221. 222. 223. 224. 225. 226. 227. 228. 229. 230. 231. 232. 233. 234. 235. 236. 237. 238. 239. 240. 241. 242. 243. 244. 245. 246. 247. 248. 249. 250. 251. 252. 253. 254. 255. 256. 257. 258. 259. 260. 261. 262. 263. 264. 265. 266. 267. 268. 269. 270. 271. 272. 273. 274. 275. 276. 277. 278. 279. 280. 281. 282. 283. 284. 285. 286. 287. 288. 289. 290. 291. 292. 293. 294. 295. 296. 297. 298. 299. 300. 301. 302. 303. 304. 305. 306. 307. 308. 309. 310. 311. 312. 313. 314. 315. 316. 317. 318. 319. 320. 321. 322. 323. 324. 325. 326. 327. 328. 329. 330. 331. 332. 333. 334. 335. 336. 337. 338. 339. 340. 341. 342. 343. 344. 345. 346. 347. 348. 349. 350. 351. 352. 353. 354. 355. 356. 357. 358. 359. 360. 361. 362. 363. 364. 365. 366. 367. 368. 369. 370. 371. 372. 373. 374. 375. 376. 377. 378. 379. 380. 381. 382. 383. 384. 385. 386. 387. 388. 389. 390. 391. 392. 393. 394. 395. 396. 397. 398. 399. 400. 401. 402. 403. 404. 405. 406. 407. 408. 409. 410. 411. 412. 413. 414. 415. 416. 417. 418. 419. 420. 421. 422. 423. 424. 425. 426. 427. 428. 429. 430. 431. 432. 433. 434. 435. 436. 437. 438. 439. 440. 441. 442. 443. 444. 445. 446. 447. 448. 449. 450. 451. 452. 453. 454. 455. 456. 457. 458. 459. 460. 461. 462. 463. 464. 465. 466. 467. 468. 469. 470. 471. 472. 473. 474. 475. 476. 477. 478. 479. 480. 481. 482. 483. 484. 485. 486. 487. 488. 489. 490. 491. 492. 493. 494. 495. 496. 497. 498. 499. 500. 501. 502. 503. 504. 505. 506. 507. 508. 509. 510. 511. 512. 513. 514. 515. 516. 517. 518. 519. 520. 521. 522. 523. 524. 525. 526. 527. 528. 529. 530. 531. 532. 533. 534. 535. 536. 537. 538. 539. 540. 541. 542. 543. 544. 545. 546. 547. 548. 549. 550. 551. 552. 553. 554. 555. 556. 557. 558. 559. 560. 561. 562. 563. 564. 565. 566. 567. 568. 569. 570. 571. 572. 573. 574. 575. 576. 577. 578. 579. 580. 581. 582. 583. 584. 585. 586. 587. 588. 589. 590. 591. 592. 593. 594. 595. 596. 597. 598. 599. 600. 601. 602. 603. 604. 605. 606. 607. 608. 609. 610. 611. 612. 613. 614. 615. 616. 617. 618. 619. 620. 621. 622. 623. 624. 625. 626. 627. 628. 629. 630. 631. 632. 633. 634. 635. 636. 637. 638. 639. 640. 641. 642. 643. 644. 645. 646. 647. 648. 649. 650. 651. 652. 653. 654. 655. 656. 657. 658. 659. 660. 661. 662. 663. 664. 665. 666. 667. 668. 669. 670. 671. 672. 673. 674. 675. 676. 677. 678. 679. 680. 681. 682. 683. 684. 685. 686. 687. 688. 689. 690. 691. 692. 693. 694. 695. 696. 697. 698. 699. 700. 701. 702. 703. 704. 705. 706. 707. 708. 709. 710. 711. 712. 713. 714. 715. 716. 717. 718. 719. 720. 721. 722. 723. 724. 725. 726. 727. 728. 729. 730. 731. 732. 733. 734. 735. 736. 737. 738. 739. 740. 741. 742. 743. 744. 745. 746. 747. 748. 749. 750. 751. 752. 753. 754. 755. 756. 757. 758. 759. 760. 761. 762. 763. 764. 765. 766. 767. 768. 769. 770. 771. 772. 773. 774. 775. 776. 777. 778. 779. 780. 781. 782. 783. 784. 785. 786. 787. 788. 789. 790. 791. 792. 793. 794. 795. 796. 797. 798. 799. 800. 801. 802. 803. 804. 805. 806. 807. 808. 809. 810. 811. 812. 813. 814. 815. 816. 817. 818. 819. 820. 821. 822. 823. 824. 825. 826. 827. 828. 829. 830. 831. 832. 833. 834. 835. 836. 837. 838. 839. 840. 841. 842. 843. 844. 845. 846. 847. 848. 849. 850. 851. 852. 853. 854. 855. 856. 857. 858. 859. 860. 861. 862. 863. 864. 865. 866. 867. 868. 869. 870. 871. 872. 873. 874. 875. 876. 877. 878. 879. 880. 881. 882. 883. 884. 885. 886. 887. 888. 889. 890. 891. 892. 893. 894. 895. 896. 897. 898. 899. 900. 901. 902. 903. 904. 905. 906. 907. 908. 909. 910. 911. 912. 913. 914. 915. 916. 917. 918. 919. 920. 921. 922. 923. 924. 925. 926. 927. 928. 929. 930. 931. 932. 933. 934. 935. 936. 937. 938. 939. 940. 941. 942. 943. 944. 945. 946. 947. 948. 949. 950. 951. 952. 953. 954. 955. 956. 957. 958. 959. 960. 961. 962. 963. 964. 965. 966. 967. 968. 969. 970. 971. 972. 973. 974. 975. 976. 977. 978. 979. 980. 981. 982. 983. 984. 985. 986. 987. 988. 989. 990. 991. 992. 993. 994. 995. 996. 997. 998. 999. 1000.		
DISTRIB		15. ENT, SURVEY, DISCIPLINE, AND RESIDENT ENGINEER 16. <input type="checkbox"/> COST TREND ENGINEER		
ADDIT. DISTRIB		17. TORREY PINES TECHNOLOGY 18. ARIZONA PUBLIC SERVICE-PVNGS		

23



STATUS: AAVENDOR: HPI

PALO VERDE NUCLEAR GENERATING STATION



NONCONFORMANCE REPORT

PP-4689
NO. _____PAGE 1 OF 2

1. UNIT <u>1</u>	2. MO DAY YR <u>10</u> <u>2</u> <u>82</u>	3. DRAWING/PART NO. <u>13PSIF 208</u>	REV. _____	4. ITEM DESCRIPTION <u>PIPE SPOOLS</u>	5. ITEM LOCATION <u>AUX - EAST WRM. ROOM</u>	
6. CLASS <u>Q2</u>	7. STARTUP SYSTEM NO. <u>RCO1/S107</u>	8. SERIAL NO. <u>15I1555001</u> <u>15I0725012</u>	9. CONTRACTOR/SUPPLIER <u>BECHTEL</u>		10. P.O. OR SPEC NO. <u>13PM204-11</u>	11. ASME AUTHORIZED INSPECTION REQ'D. <input checked="" type="checkbox"/> YES <input type="checkbox"/> NO
ITEM	12. DESCRIPTION LIST IN ORDER: NO. PCS., DWG/SPEC REQMT., PRESENT CONDITION			16. FIELD ENGR. DECISION	17. <input type="checkbox"/> FIELD RECOMMENDED DISPOSITION <input type="checkbox"/> ENGINEER CONCURRENCE REQ'D. <input type="checkbox"/> ENGINEER DISPOSITION REQ'D.	
	<u>15I072542</u> <u>REFERENCE PIECE #3/15I1555001.</u>					
	<u>SPEC 13PM204 PARA. 8.2.2</u>					
	<u>REQUIRES THAT FCRS BE</u>					
	<u>GENERATED PRIOR TO ERECTION</u>					
	<u>TO DOCUMENT VARIATIONS OUT-</u>					
	<u>SIDE OF THE ±2" TOLERANCE, AND</u>					
	<u>AN NCR BE GENERATED TO</u>					
	<u>DOCUMENT AS-BUILT SYSTEMS</u>					
	<u>WHICH EXCEED THIS TOLERANCE.</u>					
<u>1 FCR# 8816P AND WAS GENERATED</u>						
<u>PRIOR TO ERECTION OF SPOOL</u>						
13. REPORTED BY: <u>W. SHOAF</u>		15. INSPECTION/VALIDATION/REVIEW DATE _____				
19. ACCEPTANCE OF REWORK/REPAIR QC ENGR _____ DATE _____ AUTHOR. INSP _____ DATE _____			18. DISPOSITION CONCURRENCE PROJ FIELD ENGR _____ DATE _____ GROUP SUPV _____ DATE _____ AUTHORIZED INSPECTOR _____ DATE _____ NUCLEAR GROUP SUPV _____ (IF REQUIRED) DATE _____ PROJ ENGR _____ DATE _____ QA ENGR _____ DATE _____			
14. ASSUMED CAUSE OF DISCREPANCY <u>INSTALLATION ERROR</u> INITIATOR <u>Will [Signature]</u> DATE <u>10-2-82</u>						

CONTINUATION SHEET

PALO VERDE NUCLEAR GENERATING STATION				NONCONFORMANCE REPORT		NO. <u>PA-4689</u>		PAGE <u>2</u> OF <u>2</u>	
1. UNIT	2. MO DAY YR	3. DRAWING/PART NO.	REV	4. ITEM DESCRIPTION	5. ITEM LOCATION				
<u>1</u>	<u>9. 2. 82</u>	<u>13 PSIF 203</u>		<u>PIPE SPOOL</u>	<u>AUX - EAST W/APPARATUS</u>				
12. DESCRIPTION LIST IN ORDER: NO. PCS., DWG/SPEC REQMT., PRESENT CONDITION	16. FIELD ENGR DECISION	17. <input type="checkbox"/> FIELD RECOMMENDED DISPOSITION <input type="checkbox"/> ENGR DISPOSITION REQ'D <input type="checkbox"/> ENGINEER CONCURRENCE REQUIREMENT							
<u>1-51-155-5001, AND MCN 1531</u>									
<u>WAS GENERATED PER THE</u>									
<u>REQUIREMENTS OF WPP/CCI 202.0</u>									
<u>TO EXECUTE THE WORK PER THIS</u>									
<u>FCR. THE MCN HAS NOW BEEN</u>									
<u>CLOSED, BUT THE PRESENT</u>									
<u>INSTALLATION IS NOT CONSISTENT</u>									
<u>WITH THE FCR/MCN. SEE SHEET</u>									
<u>FOR AS INSTALLED CONFIGURATION.</u>									
<u>IN ADDITION VALVE ASSEMBLY V-827</u>									
<u>IS NOT INSTALLED PER THE ELEVATION</u>									
<u>SHOWN ON THE LATEST REV OF THE</u>									
<u>ISO.</u>									
<u>2. FCR 11,929-P WAS GENERATED PRIOR</u>									
<u>TO ERECTION OF SPOOL 1-51-073-5012</u>									
<u>REVISING A DIMENSION FROM</u>									
<u>8'-0" TO 8'-3 1/2". CONTRARY TO THIS</u>									
<u>THE AS-INSTALLED DIMENSION IS</u>									
<u>8'-6", SEE SHT.</u>									

SPECIFICATION

FOR

FIELD FABRICATION AND INSTALLATION

OF

NUCLEAR PIPING SYSTEMS

FOR THE

ARIZONA PUBLIC SERVICE COMPANY

PALC VERDE NUCLEAR GENERATING STATION

UNITS 1, 2, AND 3

QUALITY CLASS Q

SPECIFICATION NUMBER 13-PM-204

RECEIVED

APR 26 1982

CONSTRUCTION
PVNC

JOB NUMBER 10407

BECHTEL POWER CORPORATION

NORWALK, CALIFORNIA

△ ₆	5-25-79	Incorporated SCN 1399 (MOD) into Section 5.3.1; SCN 1300 (MOD) to Add Sections 6.3.8, 9.1.10, 9.1.11, and 9.4.7; SCN 1349 (MOD) to Add Section 12.3.15. Combined Sections 7.0 and 8.0 into Section 7.0. Added New Section 8.0; Attachments E and F, and Sections 1.2.1, 1, and k, 2.1.j, 2.3.k. Incorporated SCN 1653. Deleted SCN 1490 and Revised Section 12.1.1; SCN 1606 (MOD) in Section 12.4.1 and 12.4.2; SCN 1642 in Section 15.5 and Revised Attachment D; SCN 1640 in Section 1.1.d, 5.8.1, 6.1.2, 6.1.3, 6.2 and 12.4; SCN 1470 (MOD) in Section 12.3.16; SCN 1449 in Section 12.5.2.1; SCN 1343 in Sections 12.3.13, 12.3.13.1, 12.3.13.2, 12.3.13.3, 12.4.1, 12.4.2, 12.5, 12.5.1, 12.5.2, 12.5.2.1, 12.5.2.2, 12.5.3, 12.5.3.1, 12.5.3.2, 12.5.3.3 and 12.5.3.4. Revised Sections 5.4.3.a, 7.1.1, 7.1.2, 7.5.2, 8.1, 8.3.1.a, 8.3.2.a, 8.5.1.d, 8.5.2.b and c, 9.4.3, 9.4.6, 12.2.9.C, 12.3.3, 12.3.5.1, 12.3.5.4 and 13.2. Added Sections 8.3.2a and 12.3.17; Incorporated SCN 1702. Deleting Section 12.2.10; SCN 1708 (MOD). Adding Section 7.4.10 and Attachment G; Added Revised Appendix 4Q; and General Revision.
△ ₅	10-2-78	Incorporated SCNs: 1022 (Mod), 1049, 1164, and 1176
△ ₄	5-19-78	Incorporated SCNs 815 (Mod), 835 (Mod), 902, 942, 943 and 944 into Sections 6.3.3, 9.1.3, 9.4.4, 12.3.1, 12.3.2, 12.3.5.1, and 12.3.5.2; Added Sections 6.3.3, 7.5, and 14.0; Renumbered Sections 9.2 thru 9.2.3 to be 9.1.7 thru 9.1.9; Deleted Section 9.3.
△ ₃	1-16-78	Incorporated SCN Nos. 534, 543, 740, 742, and Added Attachment "C". Revised Section 12.3.5.1.
△ ₂	6-1-77	Incorporated SCN Nos. 278, 345, 409, 410
△ ₁	10-27-76	Added Sections 2.5, 7.1.4 and 12.0, Revised Sections 1.0, 2.0, 5.0, 6.0, 8.2, 9.1.3, 13.0 and Added 4X and 40. Incorporate SCN No. 108, 127
△ ₀	6-17-76	Issued for Construction
REV. NO.	DATE	REVISIONS

7	10-30-79	Incorporated SCNs 1727, 1772, 1820, 1829, 1833, 1866 (MOD), and 1885, 1901, 1925, and 1953. Revised Sections 9.4.3, 12.2.9a, 12.2.9b, 12.2.9c, 12.3.3, and 12.4.1. Deleted Sections 12.2.5a, 12.2.5b, 12.2.5c and 12.2.11. Added Sections 9.1.5.1, 12.2.9d, 12.3.18, and 12.3.19. Added Attachment H. Revised Appendix 4Q.
8	4-10-80	Incorporated SCNs 1978, 2028 (MOD), 2029, 2032 (MOD), 2095, 2096 (MOD), 2111, 2133, 2138, and 2190 (MOD). Revised Sections 8.3.1.a, 12.3.7, 12.3.15, 12.3.18, and 12.3.19. Added Sections 5.3.3, 5.5.3, 8.3.2d, 8.3.4, 12.3.20, 12.4.3, 16.0, and 16.1. Deleted Section 12.3.16c. Added Attachments I, J, and K.
9	8-27-81	Incorporated SCNs 2257, 2270, 2284 (MOD), 2307, 2332 (MOD), and 2351 (MOD). Revised Sections 5.4.3, 5.4.3b, 12.2.2, 12.3.4, 12.3.5.3, 12.3.8, 12.3.14 and 12.4.3. Added Sections 5.3.4, 12.2.12, 12.3.8a, 12.3.8b, 12.3.21, 12.3.22, 12.3.23, 12.3.24, 12.5.2.2c and 12.5.2.2d. Revised Attachment J. Added Attachment L. Revised Appendix 4X.
		Incorporated SCNs: 2478, 2501, 2546, 2607, 2622, 2674, 2442 (MOD), 2425, 2629 (MOD), 2636 (MOD), 2684 (MOD), 2692 (MOD), 2680 (MOD), 2695 (MOD), 2682, 2401, 2559, 2496, 2560, 2627, 2565, 2710 (MOD), 2712 (MOD). Revised Sections: 7.2.1, 8.2.2, 9.1.9, 12.2.4, 12.3.13, 12.3.13.3, 12.3.20, 12.4.2. Added Sections: 5.5.4, 5.8.5, 6.3.9, 12.2.13, 12.2.14, 12.3.25, 12.3.26, 12.3.27, 12.3.28, 12.3.29, 12.3.30, 12.6. Revised Attachments: G, H, I. Added Attachments: M, N, O, P, Q, R, S. Revised Appendix 4Q.
10	4-8-82	Incorporated SCNs 2795 (MOD), 2819, 2851 (MOD), 2875, 2931 (MOD), 2932, 2938, 2941 (MOD), 2943 (MOD). Revised Attachment H, Section 1.0, Attachments J, M, and S. Added Attachments T, U, and V. Revised Sections 5.8.5, 7.4.9, 8.3.1, and 12.3.31. Added Sections 5.8.6, 5.8.7, and 12.1.6.
REV. NO	DATE	REVISIONS

7.5 Installation of Field-Fabricated Piping

7.5.1 The requirements of the Code and this specification shall be applied to the installation of field-fabricated piping.

7.5.2 The installation of piping in nominal pipe sizes 2 inches and smaller, shall be as shown on the engineering drawings.

7.5.3 Tubing shall be cut square and burrs shall be removed. All tube fittings shall be installed in accordance with the manufacturer's recommendations.

8.0 ERECTED POSITION TOLERANCES FOR PIPING AND RELATED COMPONENTS

8.1 This section defines the tolerances allowed for variation from design position in the erection of piping systems, requirements for piping closure fit-up, and the procedures which shall be followed to control these operations.

8.2 Piping System Tolerances

8.2.1 Erected position tolerances for a system or a component may be defined as those permissible variations from the position established by the engineering drawings. Where variations occur and the variations are within the specified tolerances (and the limitations of section 8.4), the system or component shall be considered to be erected as designed.

8.2.2 A Field Change Request (FCR) is not required to permit variations within these tolerances. Prior to erection, an FCR shall be issued to document changes when required tolerances will be exceeded. As-built systems which exceed tolerances not covered by design requirements as contained in specifications, drawings or FCRs shall be documented as Nonconformance Reports (NCR) for disposition.

8.3 Allowable Variations

8.3.1 The following position tolerances are acceptable for piping systems for all services:

- a. All piping shall be installed within $\pm 1/2$ inch of design position except where the design clearance is greater than 6 inches relative to other maximum outside diameter (pipe OD plus twice the insulation thickness), conduit, equipment, structure, and other appurtenances. Where the design clearance is greater than 6 inches, the following variations shall apply, except for Nuclear Class 1:
 1. Piping, 2-1/2 inches and larger may be installed within ± 2 inches of design position.
 2. Piping 2 inches and smaller may be installed within ± 4 inches of the design position.

INFORMATION
ONLY

3. Where piping passes through a sleeve or wall penetration, the piping shall be located within $\pm 1/2$ inch of the ϵ of the sleeve or wall penetration.
4. Where piping passes through a block out, the piping shall be installed within $\pm 1/2$ inch of design location.
- b. The following requirements apply to those piping penetrations requiring sealant installation to prevent radiation streaming, air, water, smoke or noxious gas leakage, or flame propagation into critical areas of the plant.
1. The minimum clearance between the pipe OD (including insulation when applicable) shall be 0.25 inch. Specific engineering approval is required prior to installing sealant when the clearance specified is less than 0.25 inch.
 2. Sealant shall be installed in accordance with Bechtel approved vendor procedures.

INFORMATION
ONLY

IMPACT ASSESSMENT

PFR NO. 2426-PFR-071 REVISION Issue A

AFFECTED ITEM:

Pipe Line SI-155-CCBA-12" Unit 1

A. PREPARATION BY GA INITIATOR:

- 1. WHICH OF THE FIRST TWO POTENTIAL FINDING CLASSIFICATION CRITERIA APPLIES TO THIS PFR?
1 ☐ 2 ☐
- 2. IN WHAT WAY MIGHT A SUBSTANTIAL SAFETY HAZARD BE CREATED AS A RESULT OF THE VIOLATION, DISCREPANCY OR ERROR (IF 1 OR 2 ABOVE WAS CHECKED)?:

None

- 3. OTHER COMMENTS: The discrepancy is minor and would not change the analysis. It seems that this location is at the end of a pipe run and dimensional tolerances were not going to allow a matchup with the containment penetration, so minor modifications were made.

PREPARED BY: C. F. Dahms *C.F. Dahms* DATE: 10-8-82

B. PREPARATION BY GA TASK LEADER:

- 1. COMMENT ON ABOVE REPLIES:
Concur with Initiator's comments. No safety impact.
- 2. DOES EVIDENCE EXIST OF MULTIPLE SIMILAR VIOLATIONS, DISCREPANCIES OR ERRORS? IF SO, LIST RELEVANT PFR NO'S: *PFR-070*
- 3. IF POTENTIAL FINDING CLASSIFICATION CRITERIA 3, 4, OR 5 APPLIES, STATE WHICH ONE:
3 ☐ 4 ☐ 5 ☐ *N/A*
- 4. WHAT IS YOUR JUDGEMENT OF THE LIKELIHOOD OF MULTIPLE SIMILAR VIOLATIONS, DISCREPANCIES OR ERRORS ACTUALLY CREATING A SUBSTANTIAL SAFETY HAZARD - AND OF WHAT NATURE?
Not likely - based on walkdown experience, this is an "exception rather than the rule."

5. OTHER COMMENTS:

PREPARED BY: *[Signature]* DATE: 10/11/82

POTENTIAL FINDING REPORT
PVNGS QUALITY ASSURANCE VERIFICATION

PFR NO. 2426-PFR -072 REVISION Issue A

A. PREPARATION BY GA INITIATOR

AFFECTED ITEMS:

Valves 2PSIBV482 and 2PSIBV096 in Unit 2 (between Containment Spray Pump and Shutdown Cooling Heat Exchanger)

REQUIREMENT REFERENCE DOCUMENTS:

Drawing 13-M-SIP-001-7

(attachment 1)

Isometric 13-P-SIF-208-13

(attachment 2)

BASIC REQUIREMENT:

Globe Valve 2PSIBV482 preceeds vent valve 2PSIBV096.

DESCRIPTION OF POTENTIAL FINDING:

Vent Valve 2PSIBV096 found to preceed globe valve 2PSIBV482

PREPARED BY:

F. J. Weissner

DATE:

9-17-82

USE THE SPACE BELOW TO DOCUMENT ANY RE-REVIEW ACTION TAKEN BY INITIATOR ON THIS PFR.

SIGNATURE: _____

DATE: _____

B. REVIEW BY GA TASK LEADER

PFR NO. 2426-PFR - 072

REVISION Issue A

☐ REQUEST RE-REVIEW

BY: _____ DATE: _____

REASONS:

☒ AGREE PF IS VALID/INVALID

BY: [Signature] DATE: 9/17/82

☐ DISAGREE WITH INITIATOR

BY: _____ DATE: _____

REASONS:

C., D. SEE ATTACHED SECTIONS C AND D (PAGE 3)

E. RECOMMENDATION BY FINDINGS REVIEW COMMITTEE

ADDITIONAL INFORMATION REQUIRED

DEFINITION: ☒ ADEQUATE ☐ INADEQUATE

VALIDITY: ☐ VALID ☒ INVALID

CLASSIFICATION: ☐ OBSERVATION ☐ FINDING

JUSTIFICATION

CLASSIFICATION CRITERION NO. RESULTING IN "FINDING" _____

COMMENT ON "OBSERVATION" OR "FINDING" CLASSIFICATION:

BY: [Signature] DATE: 10/11/82

BY: _____ DATE: _____

F. GA PROJECT MANAGER

☒ ACCEPT

☐ REJECT

BY: [Signature] DATE: 10/11/82

C. REVIEW BY ORIGINAL DESIGN ORGANIZATION

PFR NO. 072

REVISION A

☐ AGREE ☒ DISAGREE THAT POTENTIAL FINDING IS ACCURATEBY: U. Loh DATE: 10-4-82

IF THE "DISAGREE" BLOCK WAS CHECKED, USE THE SPACE BELOW TO PROVIDE INFORMATION THAT WOULD IMPROVE ACCURACY OR DEFINITION. (USE BACK FOR ADDITIONAL SPACE.)

Vent valve 2PS1BV096 and globe valve 2PS1BV482 are installed in accordance with drawing 13-P-SIF-208, Revision 13. Detail "H" shows the described condition for Unit 2 only. Therefore, the valves are installed per the drawing requirements. The P&ID referenced in the subject finding would not show this level of detail.

D. REVIEW BY GA INITIATOR

☒ AGREE PF IS INVALID

REASON:

Detail 'H' on drawing 13-P-SIF-208, Rev. 13 clearly shows the Unit 2 arrangement. Plant is built per print. See attached ISO drawing.

BY: A. Freishner
R.D. Phelps DATE: 10-10-82

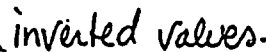
REVIEW BY GA TASK LEADER

☒ AGREE PF IS INVALID

REASON:

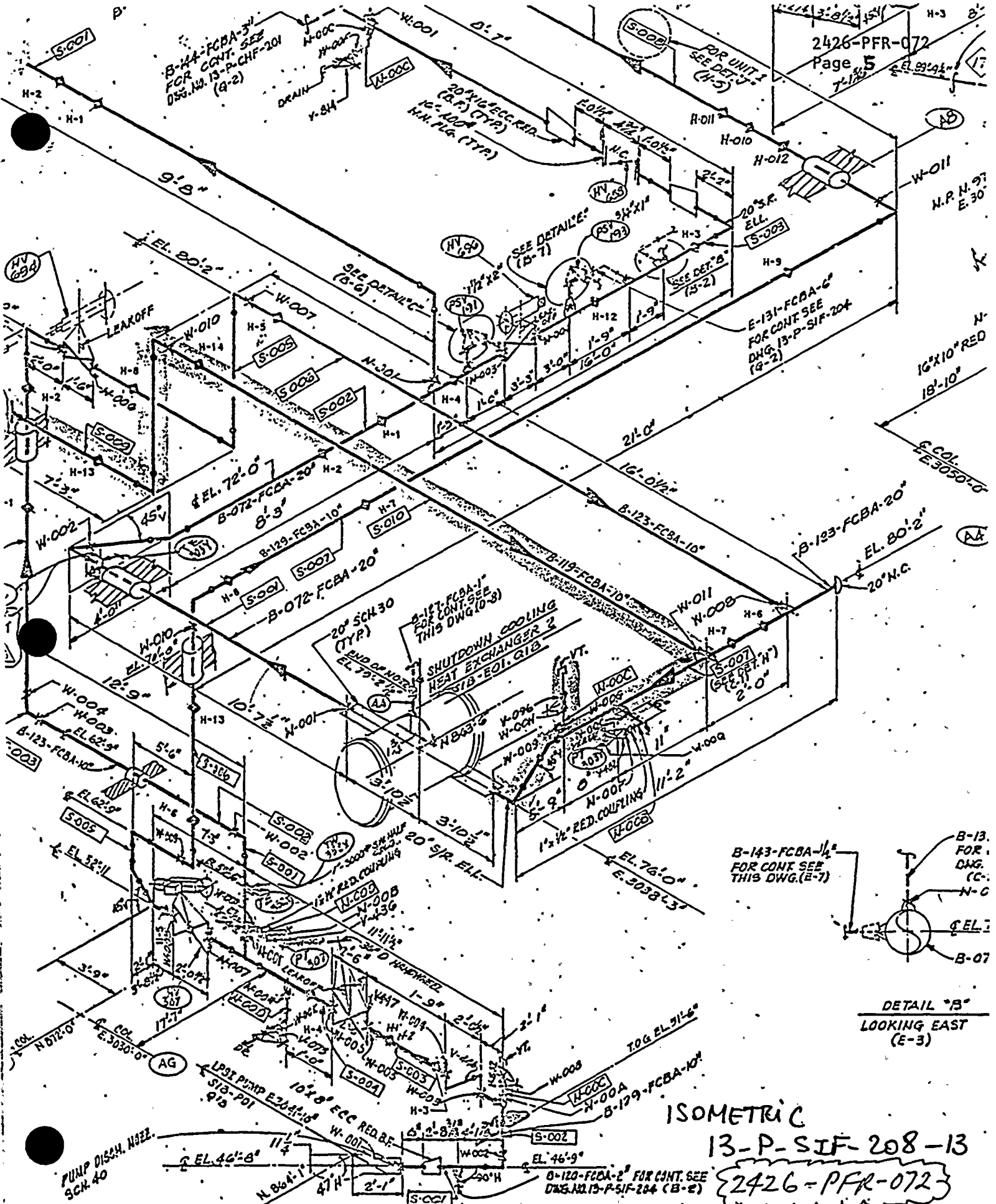
Concur with Initiator's recommendation to invalidate this PFR based on additional information provided by APP.

BY: [Signature] DATE: 10/11/82

[illegible]

PEID 13-M-SIP-001-7

2426- PFR-072 } Attach
me



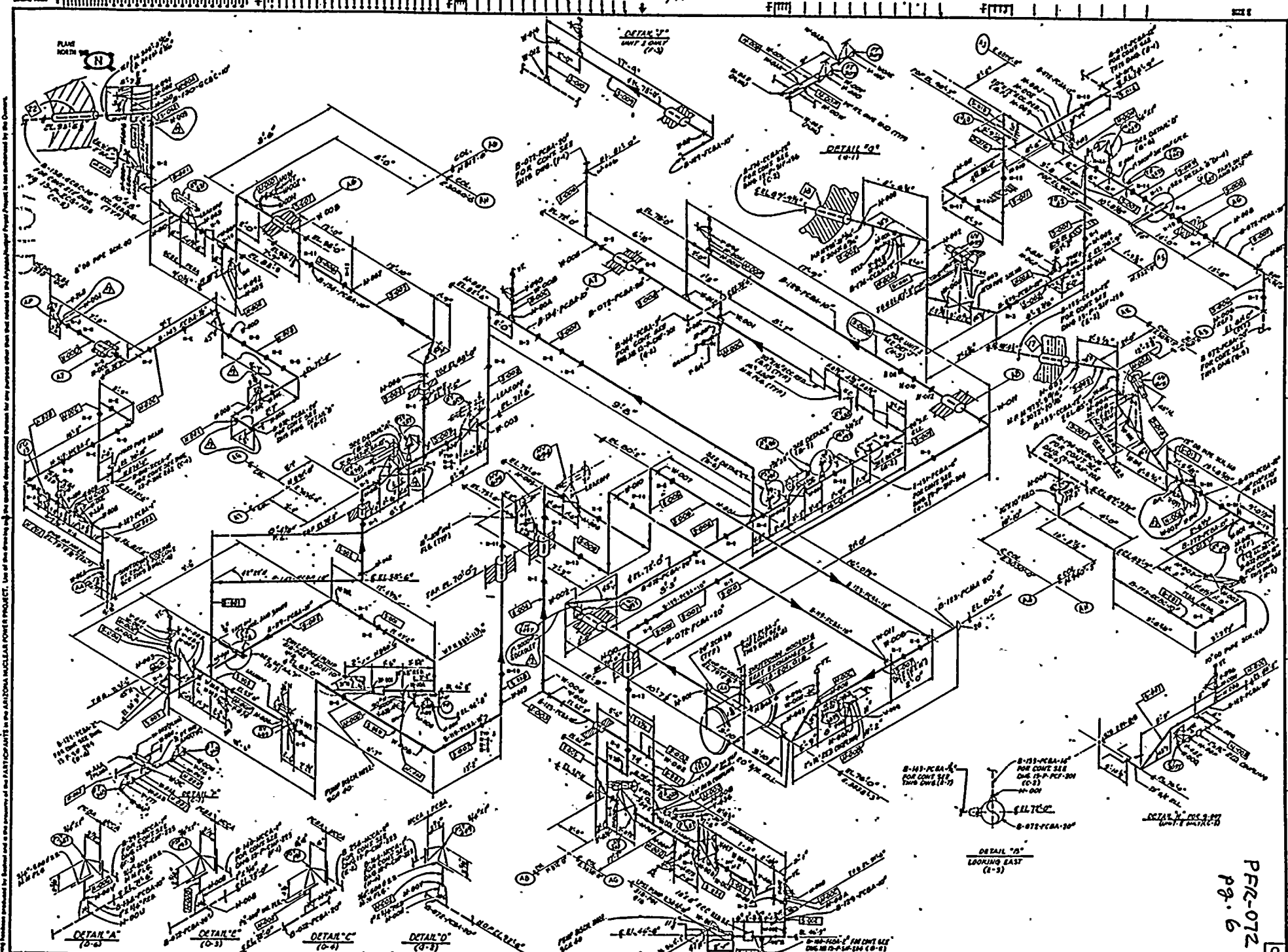
DETAIL "B"
LOOKING EAST
(E-3)

ISOMETRIC
13-P-SIF-208-13
2426-PFR-072

REVISIONS	NO.	DATE	BY	CHKD.	APP'D.	DESCRIPTION
1	1	10/1/77	W. J. H.	W. J. H.	W. J. H.	REVISED AS NOTED & INC. D.C.N. B-19
2	2	10/1/77	W. J. H.	W. J. H.	W. J. H.	REV. AS NOTED, FOR STRESS REC. INC. D.C.N. B-17

Attachment 2
BECHTE

NOT FOR CONSTRUCTION



PRC-072
Pg. 6

NO.	REVISION	DATE	BY	CHKD.	APP'D.	DESCRIPTION
1						ISSUED FOR CONSTRUCTION (0-1)
2						REVISIONS
3						REVISIONS
4						REVISIONS
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100						REVISIONS

BECHTEL
LOS ANGELES

ARIZONA NUCLEAR POWER PROJECT
PALO VERDE NUCLEAR
GENERATING STATION

**AUXILIARY BLDG ISOMETRIC
SAFETY INJECTION SYSTEM
LPSI & CONT SPRAY DISCH - TRAIN B**

SCALE: NONE

DATE: 13-9-SIF-208

REV: 13

POTENTIAL FINDING REPORT
PVNGS QUALITY ASSURANCE VERIFICATION

PFR NO. 2426-PFR -073 REVISION Issue B

A. PREPARATION BY GA INITIATOR

AFFECTED ITEMS:

1. Hand Switch AFB-HS31E, AFW Pmp B to SG 2 Upstr Vlv HV31 Disc
2. Pump - AFB-P0101C Auxiliary Feedwater Pump

REQUIREMENT REFERENCE DOCUMENTS:

1. PVNGS FSAR Section 3.11 Environmental Design of Mechanical and Elec. Equip.
2. PVNGS FSAR Section 3.7 Seismic Design
3. BPC Spec. 23-JM-200, Main Control Panels

BASIC REQUIREMENT:

(See page 1A)

DESCRIPTION OF POTENTIAL FINDING:

(See page 1A)

PREPARED BY: M. J. [Signature] DATE: 10/13/82

USE THE SPACE BELOW TO DOCUMENT ANY RE-REVIEW ACTION TAKEN BY INITIATOR ON THIS PFR.

SIGNATURE: _____ DATE: _____

PREPARED BY GA INITIATOR/TASK LEADER

PAGE NO. 1A

Basic Requirements

Per Bechtel Power Corp. letter B/CE-E 39631 dated April 28, 1982, Remote Shutdown Disconnect Panel, the disconnect/transfer switches are Electroschwitch Series 24 with 6 decks of form "C" contacts and qualification of the disconnect panel terminal blocks and the disconnect switches is within Bechtel scope. Per telephone conversations with Jim Mahlmeister and Paul Stoeppelwerth of Bechtel, the switches are to be qualified to BPC Specification 13-JM-200.

Description of Potential Finding

1. If the switch is to be qualified 13-JM-200, it is not included in Consip Customline Corp Environmental/Seismic Test Plan in BPC submittal J200-216-4.
2. If the switch is to be qualified to 13-JM-200 there is no assurance that the seismic qualification will be adequate. This is because the test response spectra is required to be 40% over the floor response spectra. However, there is no requirement in the CE specification for the panel in which the switch is to be mounted to measure the response at the switch location, and limit the response to 40% over the floor response value. Thus, the panel acceleration may exceed the 40% test requirement allowance.

B. REVIEW BY GA TASK LEADER

PFR NO. 2426-PFR - 073

REVISION B☐ REQUEST RE-REVIEW

BY: _____ DATE: _____

REASONS:

☒ AGREE PFR IS VALID/~~INVALID~~BY: Boyles DATE: 10/13/82☐ DISAGREE WITH INITIATOR

BY: _____ DATE: _____

REASONS:

Issue B retains the two valid concerns (Items 2 & 3 of Issue A).

Item 1 of Issue A has been invalidated on the basis of additional information provided by BPC in response to the PFR.

C., D. SEE ATTACHED SECTIONS C AND D (PAGE 3)

E. RECOMMENDATION BY FINDINGS REVIEW COMMITTEE

ADDITIONAL INFORMATION REQUIRED

DEFINITION: ☒ ADEQUATE ☐ INADEQUATEVALIDITY: ☒ VALID ☐ INVALIDCLASSIFICATION: ☒ OBSERVATION ☐ FINDING

JUSTIFICATION

CLASSIFICATION CRITERION NO. RESULTING IN "FINDING" _____

COMMENT ON "OBSERVATION" OR "FINDING" CLASSIFICATION:

Item 1 (failure to include switch in qualification plan) was already being addressed by BPC.

Item 2 (inconsistency on required seismic level)
Even if tested to lower of the two levels the level exceeds the FSAR requirements

BY: S. L. Kouty DATE: 10/14/82

BY: _____ DATE: _____

F. GA PROJECT MANAGER

☒ ACCEPT☐ REJECTBY: MA [Signature] DATE: 10-14-82

POTENTIAL FINDING REPORT
PVNGS QUALITY ASSURANCE VERIFICATION

PFR NO. 2426-PFR -073 REVISION Issue A

pg. 3

A. PREPARATION BY GA INITIATOR

AFFECTED ITEMS:

1. Hand Switch AFB-HS31E, AFW Pmp B to SG 2 Upstr Vlv HV31 Disc
2. Pump - AFB-P0101C Auxiliary Feedwater Pump

REQUIREMENT REFERENCE DOCUMENTS:

1. PVNGS FSAR Section 3.11 Environmental Design of Mechanical and Elec. Equip.
2. PVNGS FSAR Section 3.7 Seismic Design
3. BPC Spec. 23-JM-200, Main Control Panels

BASIC REQUIREMENT:

(See page ⁴~~1A~~)

DESCRIPTION OF POTENTIAL FINDING:

(see page ⁴~~1A~~)

PREPARED BY: M. Verdugo DATE: 9-17-82

USE THE SPACE BELOW TO DOCUMENT ANY RE-REVIEW ACTION TAKEN BY INITIATOR ON THIS PFR.

SIGNATURE: _____ DATE: _____

PREPARED BY GA INITIATOR/TASK LEADER

PAGE NO. 4
1ABasic Requirements

Per Bechtel Power Corp. letter B/CE-E-39631 dated April 28, 1982, Remote Shutdown Disconnect Panel, the disconnect/transfer switches are Electrosch Series 24 with 6 decks of form "C" contacts and qualification of the disconnect panel terminal blocks and the disconnect switches is within Bechtel scope. Per telephone conversations with Jim Mahlmeister and Paul Stoeppelwerth of Bechtel, the switches are to be qualified to BPC Specification 13-JM-200.

Description of Potential Finding

1. There is no specification which requires the remote shutdown disconnect switch AFB-HS-31E, Electrosch model 24 to be seismically or environmentally qualified.
2. If the switch is to be qualified to 13-JM-200, it is not included in Concip Customline Corp Environmental/Seismic Test Plan in BPC submittal J200-216-4.
3. If the switch is to be qualified to 13-JM-200 there is no assurance that the seismic qualification will be adequate. This is because the test response spectra is required to be 40% over the floor response spectra. However, there is no requirement in the CE specification for the panel in which the switch is to be mounted to measure the response at the switch location, and limit the response to 40% over the floor response value. Thus, the panel acceleration may exceed the 40% test requirement allowance.

B. REVIEW BY GA TASK LEADER

PFR NO. 2426-PFR

- 073

pg. 5

REVISION

Issue A

☐ REQUEST RE-REVIEW

REASONS:

BY:

DATE:

☒ AGREE PF IS VALID/~~INVALID~~

☐ DISAGREE WITH INITIATOR

REASONS:

BY:

DATE:

BY:

DATE:

C., D. SEE ATTACHED SECTIONS C AND D (PAGE 3)

E. RECOMMENDATION BY FINDINGS REVIEW COMMITTEE

ADDITIONAL INFORMATION REQUIRED

DEFINITION:

☐ ADEQUATE

☐ INADEQUATE

VALIDITY:

☐ VALID

☐ INVALID

CLASSIFICATION:

☐ OBSERVATION

☐ FINDING

JUSTIFICATION

CLASSIFICATION CRITERION NO. RESULTING IN "FINDING" _____

COMMENT ON "OBSERVATION" OR "FINDING" CLASSIFICATION:

BY:

DATE:

BY:

DATE:

F. GA PROJECT MANAGER

☐ ACCEPT

☐ REJECT

BY:

DATE:

☒ AGREE ☒ DISAGREE THAT POTENTIAL FINDING IS ACCURATE

BY: J. S. Bagga ^{MS} DATE: 9/23/82

IF THE "DISAGREE" BLOCK WAS CHECKED, USE THE SPACE BELOW TO PROVIDE INFORMATION THAT WOULD IMPROVE ACCURACY OR DEFINITION. (USE BACK FOR ADDITIONAL SPACE.)

- ① Disagree - Electroswitches ~~are~~ AFB-HS-31E is being qualified as part of JM-200.
- ② Disagree - Please refer to J200-216-6 for inclusion of this switch.
- ③ Agree .

D. REVIEW BY GA INITIATOR

☐ AGREE PF IS INVALID

REASON:

BY: _____ DATE: _____

REVIEW BY GA TASK LEADER

☐ AGREE PF IS INVALID

REASON:

BY: _____ DATE: _____

Item 1) Invalidated: BPC provided additional information adding the Electro-switch, AFB-HS31E to seismic and environmental test procedure (consip # 14604) per BPC letter B/CC-E-40092 dated June 2, 1982.

Item 2) This item is still valid. Although submittal J200-216-6 has partially addressed the Electros witch, AFB-HS31E, it has not been included in Section 5.0, Baseline Functional Test and Section 6.0 Thermal Aging Plan.

M. Verdugo 10/13/82
M. Verdugo

FROM: M.A. VERDUGO LOCATION: TO-E-160 DATE: 10/5/82TO: F.S. OPLE LOCATION: _____ DATE: _____

TELEPHONE COMMUNICATION RECORD

(PLEASE HAND LETTER LEGIBLY IN BLACK OR RED INK)

Attachment To
2426-PFR-073
pg. 8CALL INITIATED BY: J.S. BAGGA AT GAC ☐ OTHER: BPCCALL RECEIVED BY: M.A. VERDUGO AT GAC ☒ OTHER: _____OTHER PARTICIPANTS: -DATE: 10/5/82 TIME: 10:30 PROGRAM NAME: PVNGS PROGRAM NUMBER: 2426-PFR 073SUBJECT: PFR-073. QUALIFICATION OF ELECTROSWITCH AFB-HS31E, REMOTE DISCONNECT,

SUMMARY: _____

1.) FINDING #1. THERE IS NO EVIDENCE WITH THE DOCUMENTS WE HAVE IN
HOUSE (JM 200, MTL. RES. REV. 5) THAT THE SWITCH AFB-HS31E IS
BEING QUALIFIED PER JM-200.

(A) BAGGA WILL LOOK FOR CORRESPONDENCE TO CONSIDER AUTHORIZING
CONSIDER TO QUALIFY THE SWITCH

2.) FINDING #2. CONSIDER ENVIRONMENTAL/SEISMIC TEST PLAN JM-200-216-6
WE HAVE JM-200-216-4 ONLY

A.) BAGGA WILL SEND SUBMITTAL 6 (JM-200-216-6) TODAY.

ACTION ITEMS:	Date Required	Person Responsible
1.A - SEND CORRESPONDENCE	ASAP	BAGGA
2.A - SEND JM-200-216-6	10-5-82	BAGGA

DISTRIBUTION: _____

File No.: _____

IMPACT ASSESSMENT

PFR NO. 2426-PFR-073 REVISION B

pg. 9

AFFECTED ITEM:

Handswitch, AFB-HS31E
Auxiliary Feedwater Pump Discharge Valve, Remote Disconnect Switch

A. PREPARATION BY GA INITIATOR:

1. WHICH OF THE FIRST TWO POTENTIAL FINDING CLASSIFICATION CRITERIA APPLIES TO THIS PFR?

1 ☐, 2 ☐,

2. IN WHAT WAY MIGHT A SUBSTANTIAL SAFETY HAZARD BE CREATED AS A RESULT OF THE VIOLATION, DISCREPANCY OR ERROR (IF 1 OR 2 ABOVE WAS CHECKED)?:

3. OTHER COMMENTS:

See attached

PREPARED BY:

M. Verdugo

DATE:

10/13/82

B. PREPARATION BY GA TASK LEADER:

1. COMMENT ON ABOVE REPLIES:

Concur with Initiator's impact assessment.

2. DOES EVIDENCE EXIST OF MULTIPLE SIMILAR VIOLATIONS, DISCREPANCIES OR ERRORS? IF SO, LIST RELEVANT PFR NO'S:

PFR - 063

3. IF POTENTIAL FINDING CLASSIFICATION CRITERIA 3, 4, OR 5 APPLIES, STATE WHICH ONE:

3 ☐, 4 ☐, 5 ☐

4. WHAT IS YOUR JUDGEMENT OF THE LIKELIHOOD OF MULTIPLE SIMILAR VIOLATIONS, DISCREPANCIES OR ERRORS ACTUALLY CREATING A SUBSTANTIAL SAFETY HAZARD - AND OF WHAT NATURE?

Not likely - see comments on PFR-063

5. OTHER COMMENTS:

PREPARED BY:

F. Lopez

DATE:

10/13/82

Attachment to Impact Assessment 2426-PFR-073, Rev. B.Item 1

A safety hazard has not been created since the actual seismic and environmental testing on devices, AFB-HS31E has not been accomplished.

Baseline functional testing on the electroswitch series 24 switch, AFB-HS31E, must be included in section 5.0 of the Environmental/Seismic test plan J200.216 in order to compare test results with baseline data. If baseline tests are not accomplished, the test results are meaningless.

Thermal aging on electroswitch series 24 switch, AFB-HS31E, must be included in section 6.0 of the Environmental/Seismic test plan in order to determine the environmental life (non-metallic materials) of the switch.

The environmental/seismic device qualification test procedures, J200-216-6 has numerous significant comments in both environmental and seismic qualification. BPC is addressing these matters to Consip. Upon satisfactory resolution of BPC comments by Consip this document should be satisfactory.

If the baseline functional testing and thermal aging is not accomplished, then the switch cannot be qualified, which might create a substantial safety hazard by nullifying the test result and not knowing the end-of-life of the switch.

Item 2

Although actual seismic testing has not been accomplished, BPC has not met CE's seismic design requirement for the safety related handswitch.

A safety evaluation has been performed and it has been concluded that even if BPC seismically qualifies the handswitch per BPC JM-200, Appendix 4T, a safety hazard is not created because there is sufficient margin between the FSAR RRS and BPC RRS. See attached comparison curves.* *Nov 10/14/82*

* Additional explanation

Handswitch AFB-HS31E, which is being seismically qualified by BPC, is installed in a Transfer Panel** which is a CE qualified item. CE has confirmed with BPC (letter V-CE-16285, dated April 16, 1982) that the switch should be qualified to CE's generic module curve (Curve I). BPC, on the other hand, specified that the switch be qualified per BPC Spec. 23-JM-200, which in turn refers to BPC Seismic Appendix 4T (Curve II). In both cases, the RRS curves include factors to account for panel ~~magnification~~ *amplification*.

The vendor for the handswitch has not yet performed the seismic test. If the vendor proceeded to test per BPC's spec, the handswitch would be under qualified compared to CE's requirement for the panel (Curve II vs Curve I).

The transfer panel is located in the Control Bldg at Flow Elev. 100'. The flow response spectra at this level as given in the FSAR (Curve III) is well below both Curves I and II, by at least a factor of 12. *6/80* *FSO 10/14/82*

** renamed Remote Shutdown Disconnect Panel

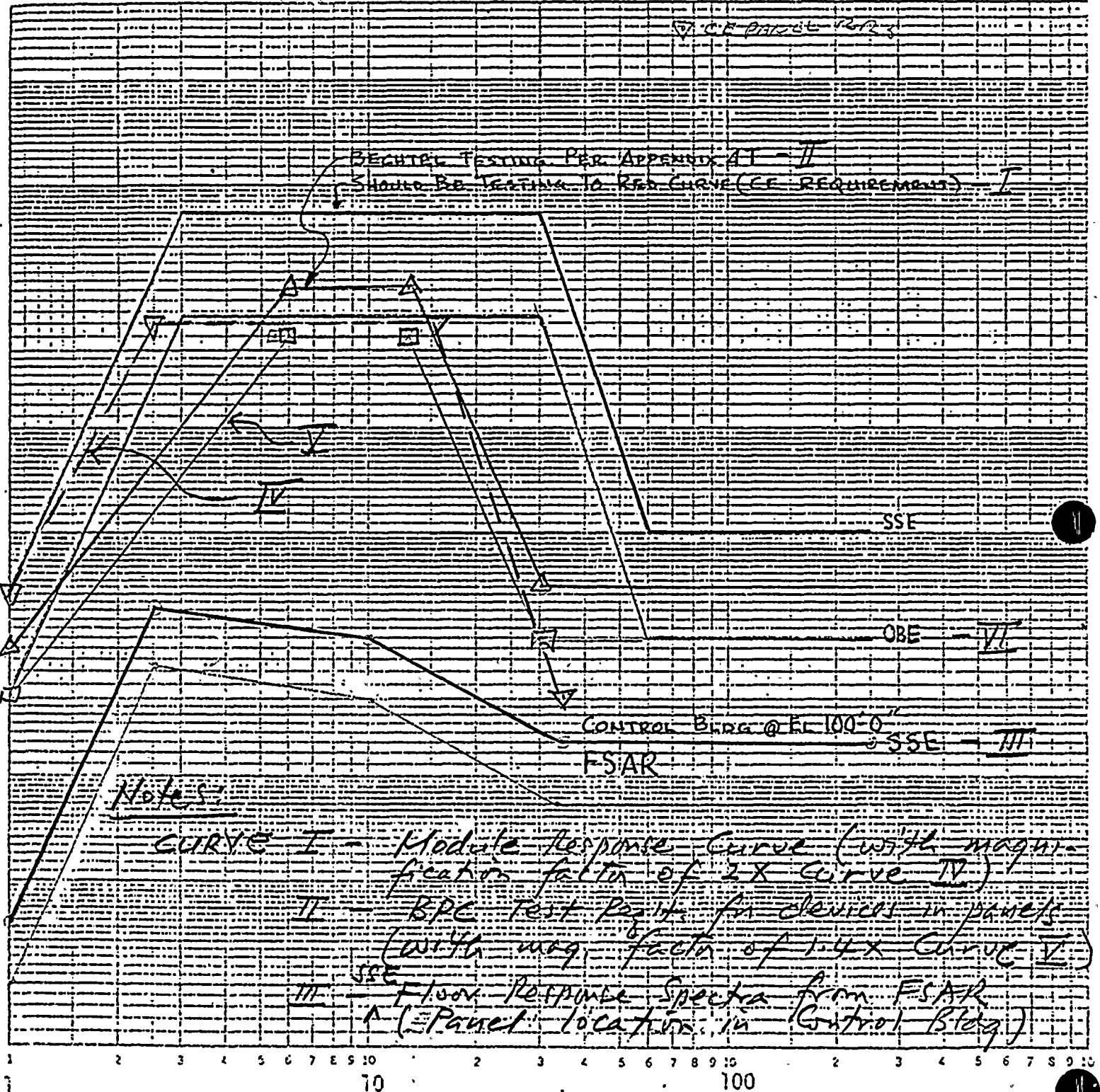
GENERIC MODULE REQUIRED RESPONSE SPECTRUM

VERTICAL & HORIZONTAL SSE & OBE

1% CRITICAL DAMPING

VERTICAL IS NEARLY THE SAME
SSE HORIZONTAL DESIGN SPECTRA 125%
DESIGN SPECTRA CORRECTED TO 100' GL.
 $138/125 = 1.5$

Attachment To
Impact Assessment, 2426-PFR-07
X BPC 4U FOR PANELS 125%
" 4T FOR DEVICES " 20%
4T FOR DEVICES 1.4 AS REQUIRED
FOR DEVICES MOUNTED IN PANELS.



Notes:

- CURVE I - Module Response Curve (with magnification factor of 2X Curve IV)
- II - BPC Test Results for devices in panels (with mag. factor of 1.4X Curve V)
- III - Floor Response Spectra from FSAR (Panel location in Control Bldg)
- IV - CE test response spectra for panel
- V - BPC " " " " devices
- VI - OBE Floor Response Spectra from FSAR

FREQUENCY (Hz)

IV - CE test response spectra for panel
V - BPC " " " " devices
VI - OBE Floor Response Spectra from FSAR

Attachment to
Impact Assessment, 2426-PFR-073
Rev B
pg 12



April 16, 1982
V-CE-16285

Mr. W. G. Bingham
Bechtel Power Corporation
12400 East Imperial Highway
Norwalk, CA 90650

Subject: Arizona Nuclear Power Project
Remote Shutdown Transfer Panel (TMI 18)

References: (A) Letter B/CE-E-39167, dated March 26, 1982
(B) Letter V-CE-16152, dated March 30, 1982
(C) Telecon from C-E (F. Murray) to Bechtel (K. Soteropoulos), April 2, 1982
(D) Telecon from C-E (F. Murray) to APS (B. Kershaw), April 8, 1982
(E) Telecon from C-E (F. Murray, F. Maguire, J. Arpin) to Bechtel (L. Delaney), April 14, 1982

Dear Mr. Bingham:

C-E's review of Reference (A), and subsequent correspondence, requires the following comments and clarifications:

- (1) Reference (B) outlined C-E's recommendation to APS for a manual loading station to replace the automatic indicator-controller for Atmospheric Dump Valve Control. The schematic passed to our Process Instrumentation Group in February does not contain sufficient information to procure the desired device. APS has directed C-E, in Reference (D), to purchase the automatic indicator-controller Bechtel has outlined. Therefore, we now request a specific model number of this Foxboro device, at your earliest opportunity, so that we can begin the procurement process for these items. C-E will proceed with transfer panel fabrication on the basis that there is no impact on termination quantities nor additional indication on the existing Remote Shutdown Panel. If C-E is to add 2 switches to the barriered Channel D section of the existing RSP we require nameplate information. We understand from Reference (E) that the ADV indicator-controller change-out requires no nameplate changes on the existing RSP.
- (2) Manufacture of the Unit 1 Transfer Panel is proceeding, despite the lack of specific wiring information Bechtel is to provide. We are pursuing the use of a wiring harness for the Unit 1 late additions, as discussed with our Paul Wolfe, as well as the changeout to an eight deck disconnect switch for Pressurizer Heater, as requested in Reference (C). At this time we intend to ship the Unit 1 Transfer Panel as originally specified (i.e. without the two process nests, SW15 for Pressurizer Heaters, and their associated wiring). The Unit 2 and 3 Transfer Panels will be shipped complete. A firm ship date for the Unit 1 Transfer Panel will be available shortly. We will advise APS of the cost and possible schedule impact of the additions described above by May 21, 1982.

Re 4444-1081

(3) C-E is proceeding on the basis that the six dual and two single Foxboro indicators you are procuring for the Tasks 8 and 9B are their Model 270 ID/IS indicators with terminal strip terminations, and dimensions identical to the existing indicators, as shown in the attachment. C-E will provide the required termination information at the Remote Shutdown Panel. Receipt of Reference (A), unfortunately, was our first look at the tag number and engraving information for Auxiliary Feedwater Flow and Condensate Storage Tank Level; we can now pass this data along to our vendor.

(4) C-E has proceeded with manufacture of the Transfer Panel on the previously agreed basis that qualification of the terminal blocks, switches and process nests will be done by Bechtel to meet the C-E generic module curve. C-E will investigate incorporation of the qualification results from the Foxboro nests in to the Transfer Panel qualification package as requested in Reference (A). Again, we will advise of cost and schedule impact of this change in jobscope. At this time we only require confirmation that the terminal blocks and switches are being qualified in the vertical orientation denoted in our drawings.

Please do not hesitate to contact us with any comments or questions. Your concurrence in writing with the assumptions outlined above is requested by April 26, 1982.

Very truly yours,

C. Ferguson /MFB

C. Ferguson
Project Manager

Attachment: Dimension Print
Foxboro 270
Series Electronic
Display Station

CF/FMM:db
Y-IPE-1781

cc: E. E. Van Brunt, Jr. - w/1
J. Vorees - w/1
W. H. Wilson
R. H. Holm
W. L. MacDonald
G. A. Butterworth
S. N. Mager
G. C. Andognini
D. B. Amerine - w/1
K. Soteropoulos - w/1

POTENTIAL FINDING REPORT
PVNGS QUALITY ASSURANCE VERIFICATION

PFR NO. 2426-PFR 074 REVISION B

A. PREPARATION BY GA INITIATOR

AFFECTED ITEMS:

Cable tray support EZALDH17, Unit 1

REQUIREMENT REFERENCE DOCUMENTS:

Acceptable engineering practice.

BASIC REQUIREMENT: Connections be installed as detailed and that the connection detailed be properly designed (Dwg. 13-E-ZAC-043, Rev. 16)

DESCRIPTION OF POTENTIAL FINDING: Detail 14 for the connect^{ion} between the vertical leg of the support and the bent plate requires a 1 1/2" long 1/8" fillet weld on each side of the unistrut when the support carries 6 or more trays. In the field, the weld is missing.

PREPARED BY:

Pete Penner

DATE:

10/13/82

USE THE SPACE BELOW TO DOCUMENT ANY RE-REVIEW ACTION TAKEN BY INITIATOR ON THIS PFR.

SIGNATURE: _____

DATE: _____

B. REVIEW BY GA TASK LEADER

PFR NO. 2426-PFR - 074

REVISION B☐ REQUEST RE-REVIEW

BY: _____ DATE: _____

REASONS:

☒ AGREE PF IS VALID/~~INVALID~~BY: F. Lopez DATE: 10/13/82☐ DISAGREE WITH INITIATOR

BY: _____ DATE: _____

REASONS:

Revision B describes the potential finding in more detail and is specific to the missing welds on the connection.

C., D. SEE ATTACHED SECTIONS C AND D (PAGE 3)

E. RECOMMENDATION BY FINDINGS REVIEW COMMITTEE

ADDITIONAL INFORMATION REQUIRED

DEFINITION: ☒ ADEQUATE ☐ INADEQUATEVALIDITY: ☒ VALID ☐ INVALIDCLASSIFICATION: ☐ OBSERVATION ☒ FINDING

JUSTIFICATION

CLASSIFICATION CRITERION NO. RESULTING IN "FINDING" 1

COMMENT ON "OBSERVATION" OR "FINDING" CLASSIFICATION:

Design allowables are exceeded because of an improperly designed support.

BY: S. A. Koub DATE: 10/14/82

BY: _____ DATE: _____

F. GA PROJECT MANAGER

☒ ACCEPT☐ REJECTBY: [Signature] DATE: 10-14-82

ure for Technical Review

LOCATION: _____ DATE: _____

0: Attachment to LOCATION: _____ DATE: _____

7426 - PFR-074

PFR-074

AJ.3

TELEPHONE COMMUNICATION RECORD

(PLEASE PRINT LETTER LEGIBLY IN BLACK OR RED INK)

CALL INITIATED BY: P. Rasmussen AT GAC ☒ OTHER: _____

CALL RECEIVED BY: WING ALC AT GAC ☐ OTHER: BPC - POWNLEY

OTHER PARTICIPANTS: _____

DATE: 9/2/87 TIME: 11:20 AM PROGRAM NAME: PUNCH REVIEW PROGRAM NUMBER: 2426

SUBJECT: PFR 074

SUMMARY: THE CONNECTION DETAIL 14 FOR SUPPORT TYPE 23 WAS
DISCUSSED. THE CONNECTION IS DESIGNED TO HANDLE THE SHEAR
LOAD BUT I POINTED OUT THAT THE MOMENT CAUSED BY
THE ECCENTRICITY OF THE AXIAL FORCE COULD NOT BE CARRIED
BY THE DESIGNED CONNECTION. WING SAID THAT HE WILL CHECK
THIS CONNECTION AND SEND THE RESULTS TOMORROW MORNING.

ACTION ITEMS:	Date Required	Person Responsible

DISTRIBUTION: _____

File No.: _____

POTENTIAL FINDING REPORT
PVNGS QUALITY ASSURANCE VERIFICATION

pg. 4

PFR NO. 2426-PFR -074 REVISION Issue A

A. PREPARATION BY GA INITIATOR

AFFECTED ITEMS:

Cable Tray Support EZALDH17 , Unit 1

REQUIREMENT REFERENCE DOCUMENTS:

13 E ZAC 043 Rev. 16
13 E ZAC 048 Rev. 7
12 E ZAC 057 Rev. 10

} attached

BASIC REQUIREMENT:

Connections be installed as detailed on design documents.

DESCRIPTION OF POTENTIAL FINDING:

The connection between the vertical support leg and the beam soffit requires a unistrut bent plate on both sides of the support leg (see type 23 support and connection details 8 and 9). As shown in the attached photographs a bent plate was installed on only one side of the support leg.

PREPARED BY:

Peter Roman

DATE:

9/10/12
9/17/12

USE THE SPACE BELOW TO DOCUMENT ANY RE-REVIEW ACTION TAKEN BY INITIATOR ON THIS PFR.

SIGNATURE: _____

DATE: _____

B. REVIEW BY GA TASK LEADER

PFR NO. 2426-PFR - 074

pg 5
Issue A
REVISION

☐ REQUEST RE-REVIEW

BY: _____ DATE: _____

REASONS:

☒ AGREE PF IS VALID/INVALID

BY: George DATE: 9/17/02

☐ DISAGREE WITH INITIATOR

BY: _____ DATE: _____

REASONS:

C., D. SEE ATTACHED SECTIONS C AND D (PAGE 3)

E. RECOMMENDATION BY FINDINGS REVIEW COMMITTEE

ADDITIONAL INFORMATION REQUIRED

DEFINITION: ☐ ADEQUATE ☐ INADEQUATE

VALIDITY: ☐ VALID ☐ INVALID

CLASSIFICATION: ☐ OBSERVATION ☐ FINDING

JUSTIFICATION

CLASSIFICATION CRITERION NO. RESULTING IN "FINDING" _____

COMMENT ON "OBSERVATION" OR "FINDING" CLASSIFICATION:

BY: _____ DATE: _____ BY: _____ DATE: _____

F. GA PROJECT MANAGER

☐ ACCEPT

☐ REJECT

BY: _____ DATE: _____

C. REVIEW BY ORIGINAL DESIGN ORGANIZATION

PFR NO.

074

pg 6

REVISION

A

☐ AGREE ☒ DISAGREE THAT POTENTIAL FINDING IS ACCURATE

BY:

DATE: 10-4-82

IF THE "DISAGREE" BLOCK WAS CHECKED, USE THE SPACE BELOW TO PROVIDE INFORMATION THAT WOULD IMPROVE ACCURACY OR DEFINITION. (USE BACK FOR ADDITIONAL SPACE.)

Drawing 13-E-ZAC-043 allows the field to use Detail 14 for installation of cable tray support EZA1DH17, in lieu of Detail 8 or 9. Detail 14 requires a unistrut bent plate on only one side of the vertical unistrut support. However, note 3 to detail 14 requires the unistrut to be fillet welded to the plate whenever there are more than five (5) trays on the support. Cable tray support EZA1DH17, in Unit 1 supports nine (9) trays and therefore should be fillet welded.

Note 3 to Detail 14 was added to the drawing in March, 1981. The above cable tray support was installed and accepted in Unit 1 prior to this date. To address this and other similar situations, there is a walkdown of all Class 1E raceway supports by Engineering and QC. This walkdown is required by DCP 1SC-ZJ-083 and is currently in progress. The walkdown will evaluate and validate the subject raceway supports.

D. REVIEW BY GA INITIATOR

☐ AGREE PF IS INVALID

REASON:

BY:

DATE:

REVIEW BY GA TASK LEADER

☐ AGREE PF IS INVALID

REASON:

BY:

DATE:

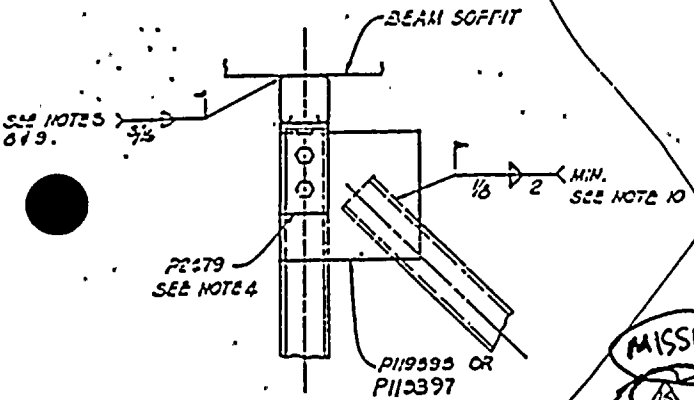
DETAIL 31

UNISTRUT
CAT. #119355

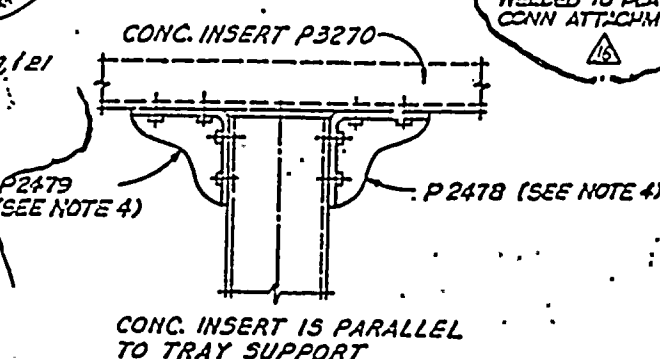
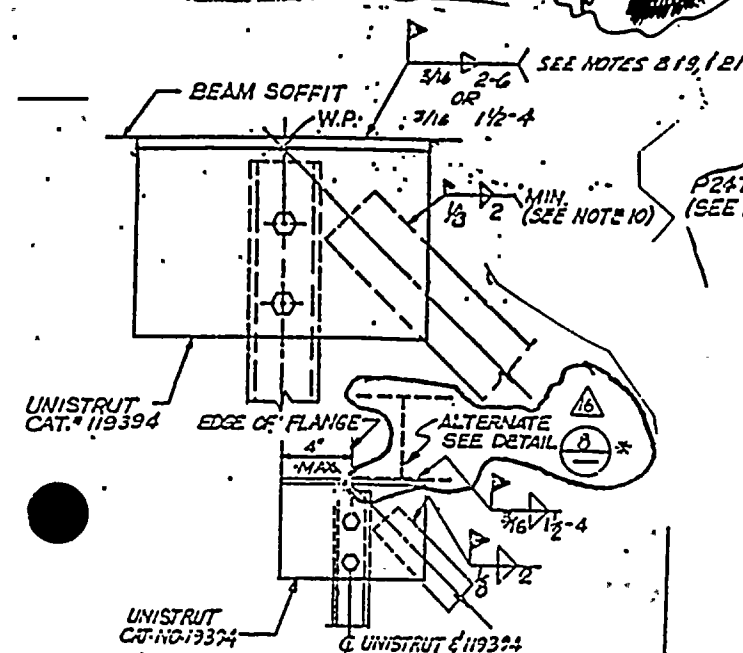
2426-PFR-074

Page 7

DETAIL 28



DETAIL 69



DETAIL 9

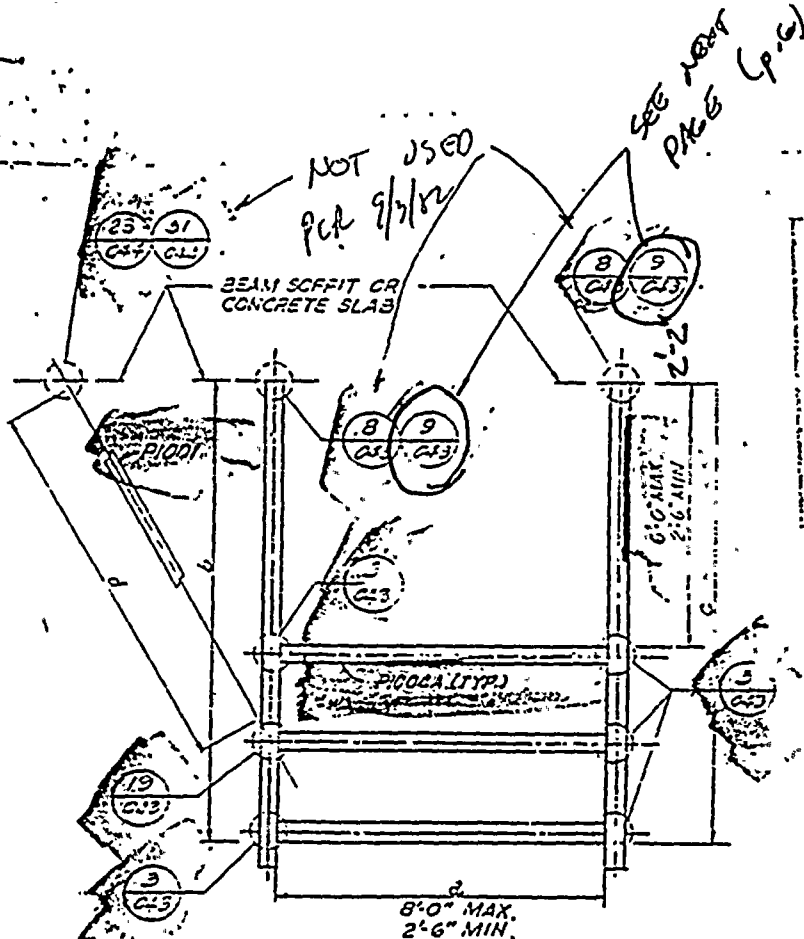
PACKAGE NO. 1-M26, PAGE 6 OF 11
 SYSTEM ELECTRICAL CABLE SUPPORTS
 TAG NUMBERS E&A 10417
 REPRODUCED FROM 28-31 13-E-2K-044-13
 DCN'S NONE MAY FOR ANY OF THE 3 DWGS.
 FOR'S 043- SEE NEXT PAGE FOR LIST
 044- 41215E, 15507E,
 057- 23 913E

TORREY PINES TECHNOLOGY
 ARIZONA PUBLIC SERVICE—PVNGS

- NOTES:
1. DO NOT USE FOR CANTILEVER TYPE SUPPORT
 2. MAX. OF 5 TRAY FOR TRAPEZE DRACED TRANSVERSELY AND LONGITUDINALLY ALL BUILDINGS AND ALL ELEVATIONS
 3. FOR G-10 TRAYS, WELD VERTICAL UNISTRUT TO ANGLE ON BOTH SIDES WITH A 1/8" FILLET WELD 1 1/2" LONG EACH SIDE (MIN).

DETAIL 14

Attachment to
 2426-PFR-074

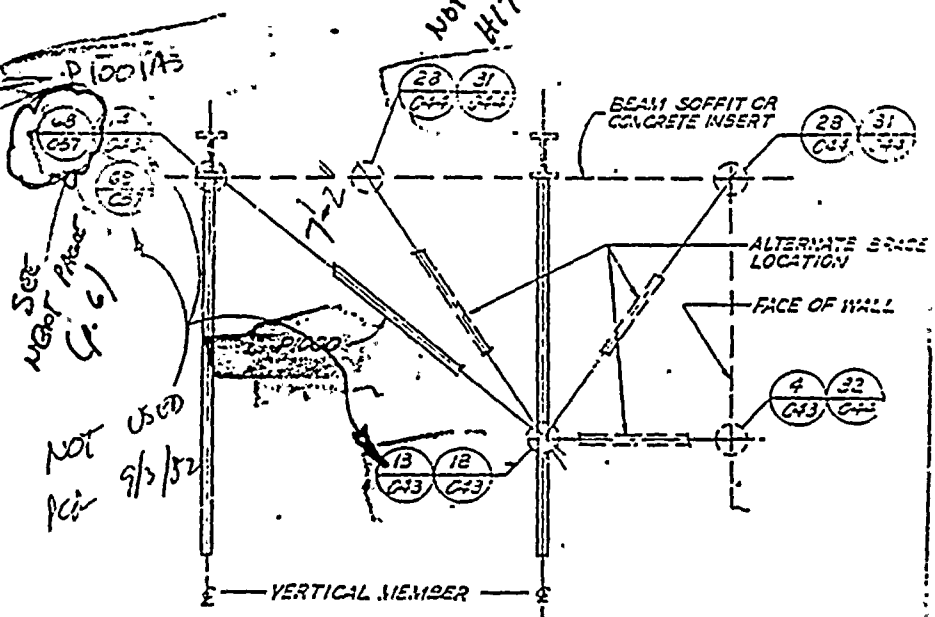


PACKAGE NO. 1-M26, PAGE 5 OF 11
SYSTEM ELECTRICAL CABLE SUPPORTS
TAG NUMBERS E210 H17
REPRODUCED FROM 13-E-ZAC-048-7
DOWS NONE APPLY
TOWS NONE APPLY PER APPLY

TORREY PINES TECHNOLOGY
ARIZONA PUBLIC SERVICE—PVNGS

FOR LONGITUDINAL BRACING SEE DET (2)
NOTES: 1. IF MORE THAN TWO TRAYS ARE CARRIED, BELOW POINTS OF CONN. THIS TRANSVERSE CONN. CAN NOT BE USED.
2. BOTTOM FITTING FOR EACH CONN. MAY BE FITTED WITH THE LONG LEG AGAINST HOR. MEMBER IF NECESSARY.

HANGER NUMBER	TYPE	DIMENSION							
		a	b	c	d	e	f	g	
23-1	LENGTH	7'-3"	7'-10"	7'-10"	3'-3"				
	PIECES REQ'D	5							
23-2	LENGTH	6'-0"	7'-10"	7'-10"	3'-3"				
	PIECES REQ'D	4							
23-3	LENGTH	7'-0"	8'-2"	9'-0"	*				
	PIECES REQ'D	5							
23-4	LENGTH	5'-5"	8'-3"	7'-9"	*				
	PIECES REQ'D	5							
23-5	LENGTH	5'-5"	7'-5"	8'-2"	*				
	PIECES REQ'D	3	1	1	1				
23-6	LENGTH	6'-6"	7'-0"	7'-0"	*				
	PIECES REQ'D	1							
	LENGTH								
	PIECES REQ'D								
	LENGTH								
	PIECES REQ'D								
	LENGTH								
	PIECES REQ'D								



NOTES: 1. LONGITUDINAL BRACING SHALL BE CONNECTED TO THE VERTICAL MEMBER SUCH THAT NO MORE THAN TWO BOYS OF TRAYS ANTILEVER BELOW THE POINT OF CONNECTION.
2. LENGTH OF ALL BRACES SHALL BE DETERMINED BY FIELD PROVIDED THE CRITERIA IN NOTE 22 DWS 13-E-ZAC-043 ARE MET.
3. BRACE LOCATIONS ARE SHOWN ON CONDUIT & TRAY DRAWINGS.

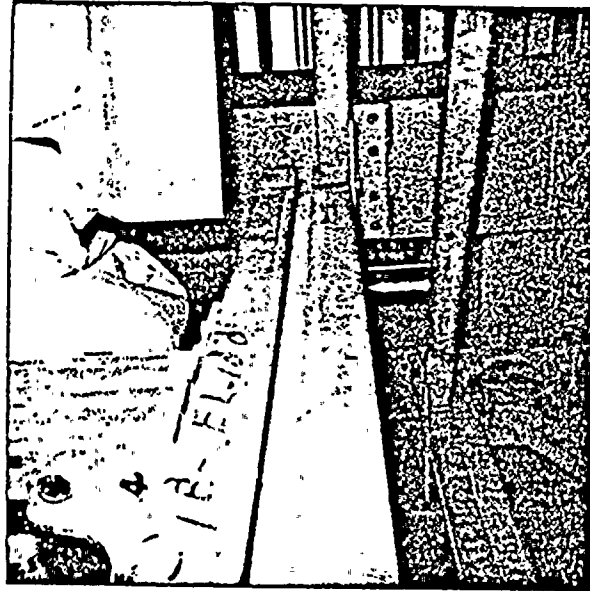
DETAIL (2)

Attachment to
2426-PFR-074

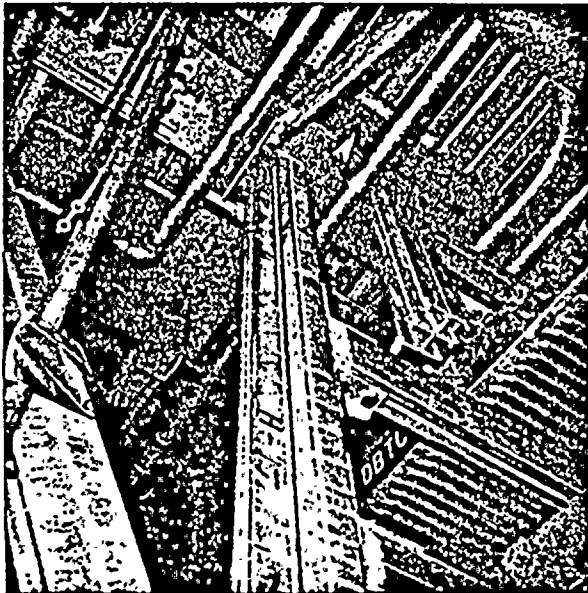
CABLE TRAY
Support

EZAIDH17

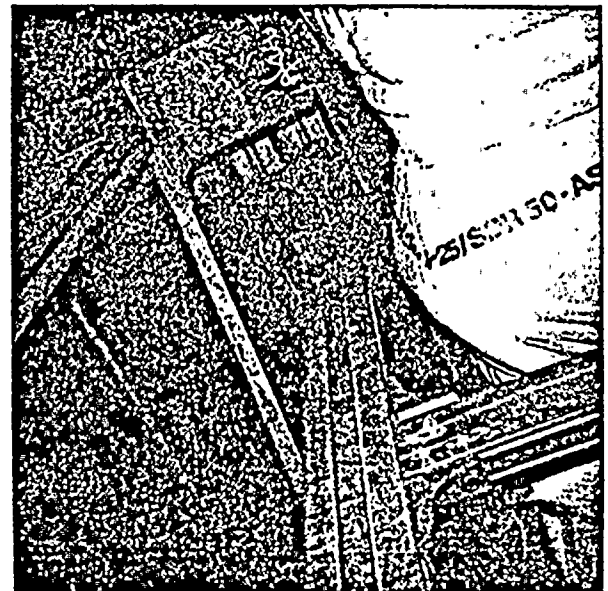
Unit 1



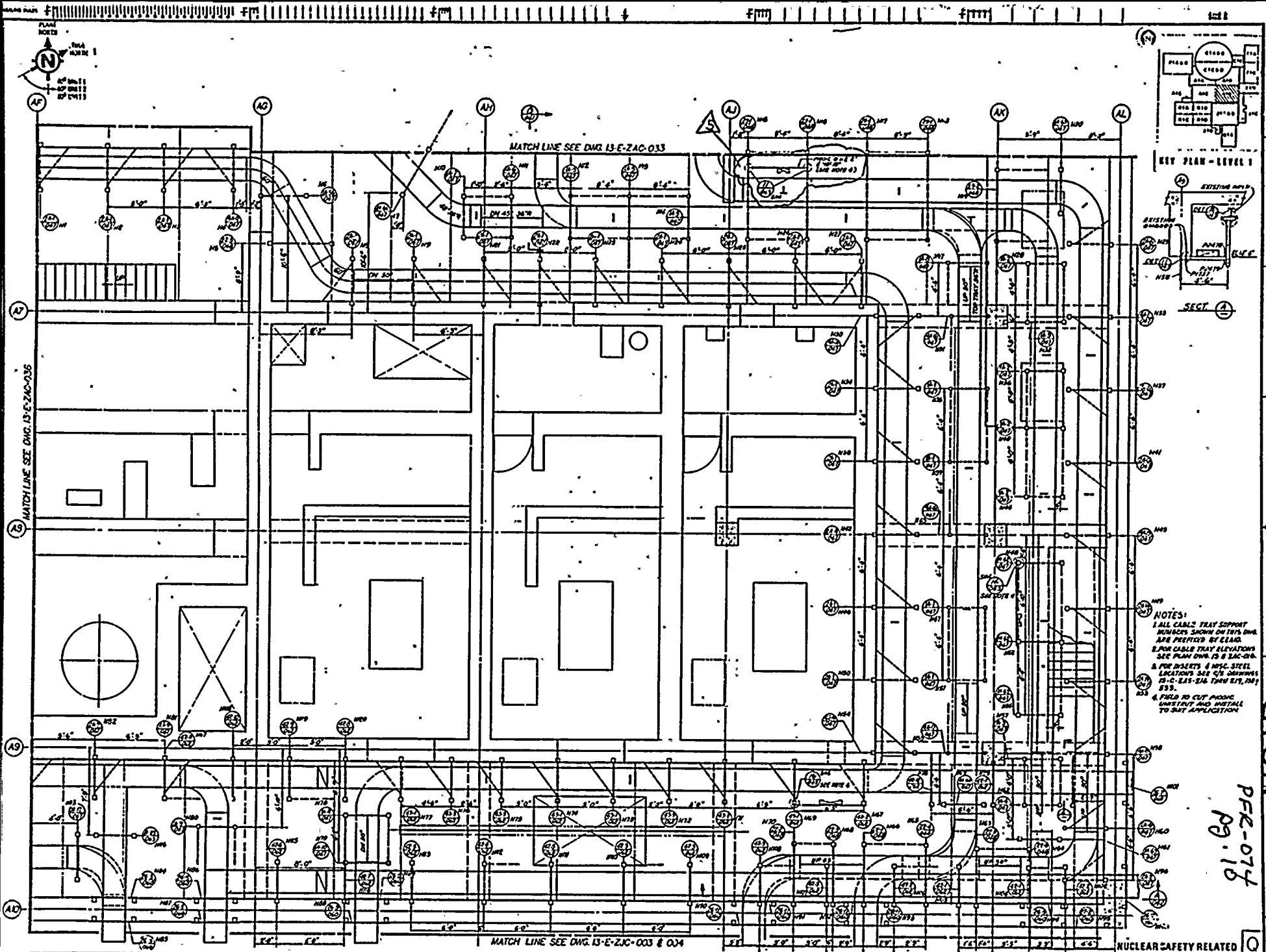
CONNECTION OF INTEREST
AT THE TOP OF THIS LEG



CONNECTION OF INTEREST
AT TOP OF THIS LEG.



CONNECTION OF INTEREST AT THE
TOP OF THIS LEG



VOID
NOT FOR CONSTRUCTION

PFC-076
PG. 16

<p>REVISED BY: [Signature]</p> <p>DATE: [Date]</p>	<p>1</p>	<p>2</p>	<p>3</p>	<p>4</p>	<p>5</p>	<p>6</p>	<p>7</p>	<p>8</p>	<p>9</p>	<p>10</p>	<p>11</p>	<p>12</p>	<p>13</p>	<p>14</p>	<p>15</p>
--	----------	----------	----------	----------	----------	----------	----------	----------	----------	-----------	-----------	-----------	-----------	-----------	-----------

BECHTEL
LOS ANGELES

ARIZONA NUCLEAR POWER PROJECT
PALO VERDE NUCLEAR
GENERATING STATION

AUXILIARY BLDG TRAY HANGER
LAYOUT PLAN AT EL. 100 FT LEVEL 10

SCALE: 3/8" = 1'-0"

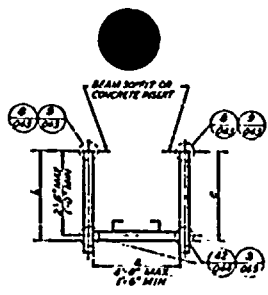
NO. 100

10000

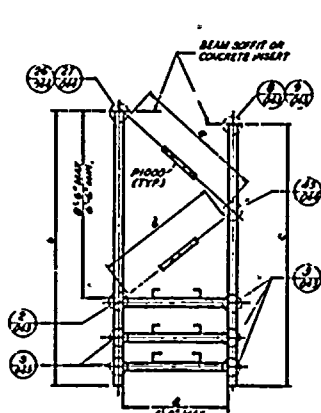
12

17

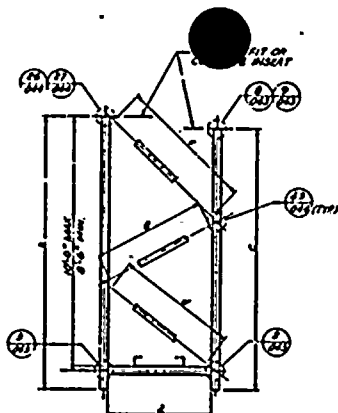
5



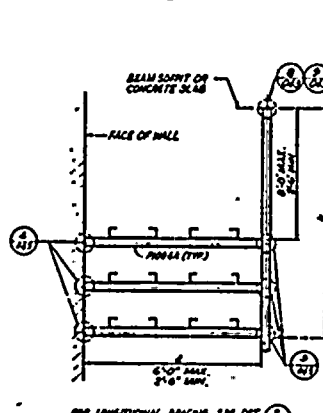
TYPE—(2)		DIMENSION									
MEMBER NUMBER		1	2	3	4	5	6	7	8	9	10
1	LENGTH	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5
2	POCKET DEPTH	1	1	1	1	1	1	1	1	1	1
3	LENGTH	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5
4	POCKET DEPTH	1	1	1	1	1	1	1	1	1	1
5	LENGTH	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5
6	POCKET DEPTH	1	1	1	1	1	1	1	1	1	1
7	LENGTH	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5
8	POCKET DEPTH	1	1	1	1	1	1	1	1	1	1
9	LENGTH	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5
10	POCKET DEPTH	1	1	1	1	1	1	1	1	1	1



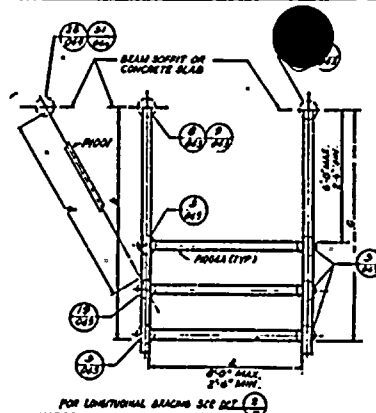
FOR LONGITUDINAL BRACING SEE DET. 1
 FOR TRANSVERSE BRACING SEE NOTE 3



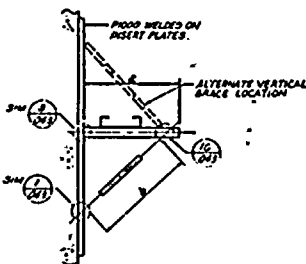
FOR LONGITUDINAL BRACING SEE DET. 1
 FOR TRANSVERSE BRACING SEE NOTE 3



FOR LONGITUDINAL BRACING SEE DET. 1
 NOTE: 1. BOTTOM FITTING FOR EACH CONNECTION MAY BE FITTED WITH THE LONG END AGAINST THE MEMBER IF NECESSARY.

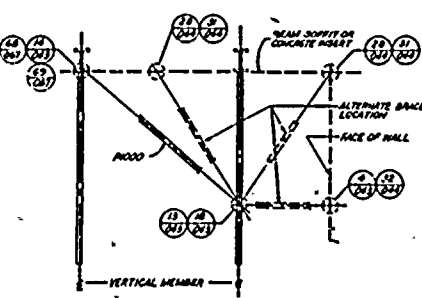


FOR LONGITUDINAL BRACING SEE DET. 1
 NOTES: 1. IF MORE THAN TWO TRAYS ARE CONNECTED, BOTTOM POINT OF CHAIN THIS TRANSVERSE CHAIN CAN NOT BE USED. 2. BOTTOM FITTING FOR EACH CHAIN MAY BE FITTED WITH THE LONG END AGAINST THE MEMBER IF NECESSARY.

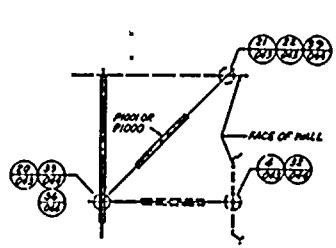


FOR LONGITUDINAL BRACING IN R2 SEE DET. 1

TYPE—(2)		DIMENSION									
MEMBER NUMBER		1	2	3	4	5	6	7	8	9	10
1	LENGTH	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5
2	POCKET DEPTH	1	1	1	1	1	1	1	1	1	1
3	LENGTH	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5
4	POCKET DEPTH	1	1	1	1	1	1	1	1	1	1
5	LENGTH	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5
6	POCKET DEPTH	1	1	1	1	1	1	1	1	1	1
7	LENGTH	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5
8	POCKET DEPTH	1	1	1	1	1	1	1	1	1	1
9	LENGTH	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5
10	POCKET DEPTH	1	1	1	1	1	1	1	1	1	1



NOTES: 1. LONGITUDINAL BRACING SHALL BE CONNECTED TO THE VERTICAL MEMBER SUCH THAT NO MORE THAN TWO TRAYS TRANSVERSE CHAIN BEYOND THE POINT OF CONNECTION. 2. LENGTH OF ALL BRACES SHALL BE DETERMINED BY FIELD, PROVIDED THE CRITERIA IN NOTE 2B DWS 13-E-ZAC-048 ARE MET. 3. BRACE LOCATIONS ARE SHOWN BY CHAIN & TRAY DRAWINGS. 4. DETAIL 1



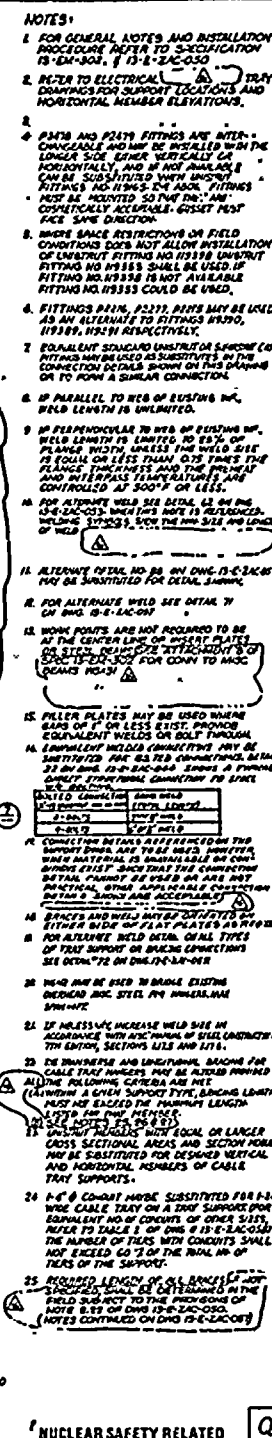
NOTES: 1. LONGITUDINAL BRACE AT UPPERMOST & LOWEST TRAYS MAY BE USED TO LOCATE BRACES TO WALL IF EVERY OTHER MEMBER. 2. LENGTH OF ALL BRACES SHALL BE DETERMINED BY FIELD, PROVIDED THE CRITERIA IN NOTE 2B DWS 13-E-ZAC-048 ARE MET. 3. BRACE LOCATIONS ARE SHOWN IN CHAIN & TRAY DRAWINGS. 4. DETAIL 2

TYPE—(2)		DIMENSION									
MEMBER NUMBER		1	2	3	4	5	6	7	8	9	10
1	LENGTH	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5
2	POCKET DEPTH	1	1	1	1	1	1	1	1	1	1
3	LENGTH	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5
4	POCKET DEPTH	1	1	1	1	1	1	1	1	1	1
5	LENGTH	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5
6	POCKET DEPTH	1	1	1	1	1	1	1	1	1	1
7	LENGTH	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5
8	POCKET DEPTH	1	1	1	1	1	1	1	1	1	1
9	LENGTH	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5
10	POCKET DEPTH	1	1	1	1	1	1	1	1	1	1

TYPE—(2)		DIMENSION									
MEMBER NUMBER		1	2	3	4	5	6	7	8	9	10
1	LENGTH	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5
2	POCKET DEPTH	1	1	1	1	1	1	1	1	1	1
3	LENGTH	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5
4	POCKET DEPTH	1	1	1	1	1	1	1	1	1	1
5	LENGTH	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5
6	POCKET DEPTH	1	1	1	1	1	1	1	1	1	1
7	LENGTH	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5
8	POCKET DEPTH	1	1	1	1	1	1	1	1	1	1
9	LENGTH	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5
10	POCKET DEPTH	1	1	1	1	1	1	1	1	1	1

NOTES: 1. ALL MEMBERS ARE POOD UNLESS OTHERWISE NOTED. 2. FOR GENERAL NOTES SEE DWS 13-E-ZAC-048. 3. FOR CONNECTION DETAILS REFER TO DRAWINGS 13-E-ZAC-048, 049 & 050. 4. IF INDICATED LENGTH IS TO BE DETERMINED BY FIELD USE POOD IF LENGTH EXCEEDS 6'12". 5. LENGTH OF ALL BRACES SHALL BE DETERMINED BY FIELD, PROVIDED THE CRITERIA IN NOTE 2B DWS 13-E-ZAC-048 ARE MET. 6. FIELD MAY ELECT TO SUPPLY TRANSVERSE BRACE AT EVERY 01'-3" SUPPLY FOR TRAFFIC TYPE ONLY, RATHER THAN EVERY 1' SUPPLY, IN UNLESS CASE USE POOD.

VOID
 FOR CONSTRUCTION
 P-2-074
 P-4-11



 BECHTEL LOS ANGELES		CATEGORY 1 TRAY SUPPORT DETAILS & NOTES SHT. 1	
ARIZONA NUCLEAR POWER PROJECT PALO VERDE NUCLEAR GENERATING STATION		SCALE: AS SHOWN	SHEET NO. 10407

IMPACT ASSESSMENT

PFR NO. 2426-PFR-074 REVISION B

AFFECTED ITEM:

Cable Tray Support EZA1DH17, Unit 1.

A. PREPARATION BY GA INITIATOR:

1. WHICH OF THE FIRST TWO POTENTIAL FINDING CLASSIFICATION CRITERIA APPLIES TO THIS PFR?

1 ☒, 2 ☐,

2. IN WHAT WAY MIGHT A SUBSTANTIAL SAFETY HAZARD BE CREATED AS A RESULT OF THE VIOLATION, DISCREPANCY OR ERROR (IF 1 OR 2 ABOVE WAS CHECKED)?:

See attached sheet

3. OTHER COMMENTS:

PREPARED BY: P. Remmer

DATE: 10/14/82

B. PREPARATION BY GA TASK LEADER:

1. COMMENT ON ABOVE REPLIES:

Concur with Initiator's impact assessment.

2. DOES EVIDENCE EXIST OF MULTIPLE SIMILAR VIOLATIONS, DISCREPANCIES OR ERRORS? IF SO, LIST RELEVANT PFR NO'S:

N/A

3. IF POTENTIAL FINDING CLASSIFICATION CRITERIA 3, 4, OR 5 APPLIES, STATE WHICH ONE:

3 ☐, 4 ☐, 5 ☐

4. WHAT IS YOUR JUDGEMENT OF THE LIKELIHOOD OF MULTIPLE SIMILAR VIOLATIONS, DISCREPANCIES OR ERRORS ACTUALLY CREATING A SUBSTANTIAL SAFETY HAZARD - AND OF WHAT NATURE?

This type of connection detail is used with Type 23 cable tray support, although not all may have more than 5 trays.

5. OTHER COMMENTS:

Criterion 4 could apply.

PREPARED BY: JSplus

DATE: 10/14/82

PREPARED BY GA INITIATOR/TASK LEADER

PAGE NO. 14 XX

Attachment to Impact Assessment

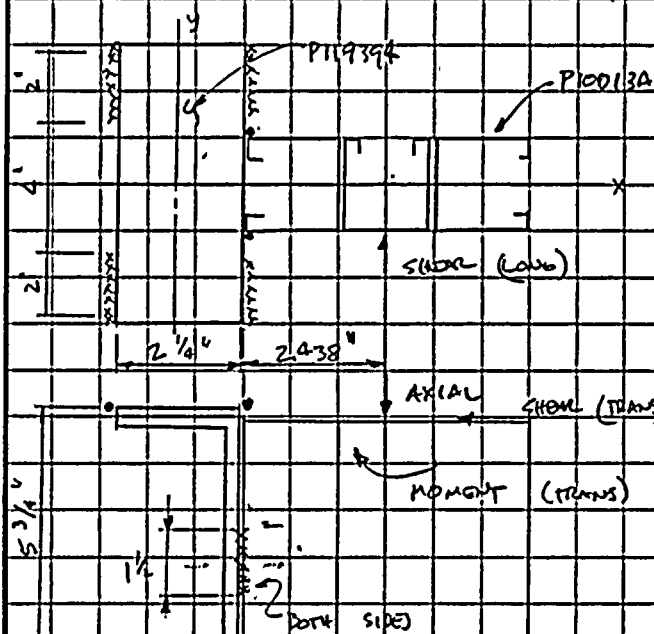
When the field connection was inspected to see if it could take the loads, it was discovered that the connection could not withstand the axial force without the bolts slipping. Since APS and BPC realized the problem existed and had made a design change in March of 1981, the new design was investigated for its adequacy. As the attachments show, the modified design is adequate for shear alone but will not be adequate for transfer of the moment caused by the eccentricity of the axial force with respect to the connection between the bent plate and the vertical P10013A member. For these calculations, the design load of 40 lbs/ft was used, which is not overly conservative compared to the Design Guide - C2.7 loads of 33.2 - 49.7 lbs/ft (see attachment). A crude estimate of the relative stiffnesses of the P10013A and the bent plate indicated that only about 40% of the moment will be taken by the connection. Also, the initial computer analysis assumed fixed connections to the existing steel, since this is not the case, the connection was evaluated with only the eccentric moment and the axial shear forces and under the assumption that 40% of the moment is transferred to the connection. The interaction between shear and moment shows the connection to be inadequate. The failure of this type of connection could cause damage to the cables supported.

P. R. ...
10/11/82

CALCULATIONS FOR IMPACT ASSESSMENT FOR PFR 074		PFR-074 pg 15	
EQUIP. NO.	PROJ. NO.	CALC. NO.	PAGE 1 OF
PREPARED BY P. RASMUSSEN	DATE 10/10/82	REF. DOCUMENTS: 13-E-242-043 HW16	
REVIEWED BY	DATE		
APPROVED BY	DATE		

CHECK CAPACITY OF ECCENTRICALLY LOADED WELD GROUP FOR
DETAIL 14 ON DWG 13-E-242-042 -16

INSTALLED CONNECTION IS



USE THE VALUES OBTAINED FROM
COMPUTER OUTPUT FOR SUPPORT
TYPE 23 AT JOINT 12

(GA-AC-4444-0765)

FOR 1 g LOADINGS
VERT LONG TRANS

AXIAL = 1.2 k 3.19 k 4.25 k

SHEAR 0.03 0.45 k 0.48 k

MOMENT -0.30 0 12.33 in-k

$g_v = 0.65 g$

$g_r = 0.65 g$

$g_z = 1.40 g$

CHECK P119394 WELDS

AXIAL FORCES CREATE AN ADDITIONAL MOMENT ON THE WELD

$$M_{AD} = 1.2 (2.438 + 1.125) = 4.28 \text{ in-k}$$

$$M_{DS} = \sqrt{[1.21 (0.65)]^2 + [4.25 (0.65)]^2 + [(3.19) (0.4)]^2} (3.563) = 18.9 \text{ in-k}$$

IGNORE TWISTING MOMENT CAUSED BY LONG. SHEAR FORCE SINCE IT IS
SO SMALL

$$M_{DT} = 4.28 + \sqrt{18.9^2 + [12.33 (0.65)]^2} = 4.28 + 20.53 = 24.80 \text{ in-k}$$

CALCULATIONS FOR IMPACT ASSESSMENT FOR PFR # D74		PFR-074 pg 16	
EQUIP. NO.	PROJ. NO.	CALC. NO.	PAGE 2 OF
PREPARED BY P. RASMUSSEN	DATE 10/10/82	REF. DOCUMENTS:	
REVIEWED BY	DATE		
APPROVED BY	DATE		

$$S_w = 2(2)(2.25) = 9 \text{ in}^2$$

$$A_w = 2(4) = 8 \text{ in}$$

AXIAL LOADS + MOMENTS	CORRECTION	±	STRESS
SHEAR (LONG)	"	y	STRESS
SHEAR (TRANS)		x	STRESS

$$f_x = \frac{0.45(0.65)}{8} = 0.04 \text{ ksi}$$

$$f_y = \frac{0.45(1.4)}{8} = 0.08 \text{ ksi}$$

$$f_z = \left(\frac{4.78}{9} + \frac{1.21}{8} \right)^2 + \left(\frac{20.55}{9} \right)^2 + \left(\frac{1.21(0.65)}{8} \right)^2 + \left(\frac{3.19(1.4)}{8} + \frac{4.25(0.65)}{8} \right)^2$$

$$f_z = 3.00 \text{ ksi}$$

$$f_{\text{tot}} = (f_x^2 + f_y^2 + f_z^2)^{1/2} = 3.00 \text{ ksi}$$

$$\text{WELD SIZE REQ'D} = \frac{3.00}{11.2} = 0.268" \geq \frac{3}{16} = 0.1875$$

$$1.6\left(\frac{3}{16}\right) = 0.3" > 0.268" \therefore \text{OK IF SENSIBLE INCREASE IS TAKEN.}$$

CHECK WELD BETWEEN VERTICAL LEG AND PLATE

SINCE AXIAL FORCES DOMINATE THE DESIGN ONLY THEY WILL BE CONSIDERED.

SINCE THE LOCATION OF THE $1\frac{1}{2}"$ $\frac{1}{8}"$ FILLET WELD IS NOT SPECIFIED, THE WORST CASE WILL BE SELECTED. FOR THE WORST LOCATION THE WELD IS PLACED BETWEEN THE BOLTS THIS REDUCES S TO ITS MINIMUM VALUE.

CALCULATIONS FOR <u>PAINT</u> ASSESSMENT FOR <u>PFR 074</u>		<u>PFR-074</u> pg 18	
EQUIP. NO.	PROJ. NO.	CALC. NO.	PAGE 4 OF
PREPARED BY <u>P. Rasmussen</u>	DATE <u>10/11/72</u>	REF. DOCUMENTS:	
REVIEWED BY	DATE		
APPROVED BY	DATE		

CASE III - P10013A TAILER MOMENT CONNECTION TAILER SHEAR

$$f_b = \frac{M}{S_1} = \frac{18.15}{1.305} = 13.9 \text{ ksi IN ADDITION TO OTHER LOADS}$$

$$\text{SHEAR CAPACITY} = 2(1.5)(1.6) + 3(0.3)(20)(0.707)(0.125)(1.6)$$

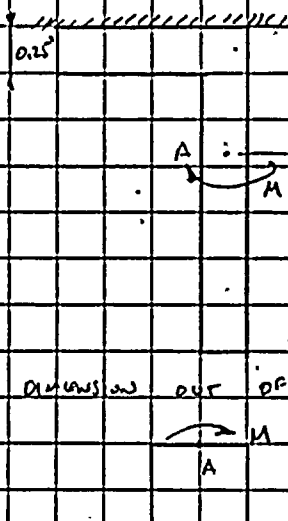
$$= 13.71 \text{ k}$$

$$\text{SHEAR} = 1.21 + \sqrt{[(1.21)(0.65)]^2 + [3.19(0.65)]^2 + [4.25(0.65)]^2}$$

$$= 6.5 \text{ k}$$

TO DETERMINE HOW MUCH MOMENT WILL BE TRANSFERRED, COMPUTE THE RELATIVE STIFFNESS OF THE CLIP ANGLE AND THE VERTICAL P10013A.

P119394 ASSUME POINT A, HALF WAY BETWEEN BOLT C'S, DOES NOT MOVE



$$\Delta_A = \frac{M(2.375)^2}{2EI} = \frac{2.82M}{EI}$$

$$I_R = \frac{8(0.25)^2}{12} = 0.01 \text{ in}^4$$

DIMENSION OUT OF PAGE = 8"

$$\Delta_A = \frac{M(44)^2}{2EI}$$

CONSTRAINT
A FIXED
END

P10013A

P1001

CALCULATIONS FOR IMPACT ASSESSMENT FOR PFR 074		PFR-074 pg. 19	
EQUIP. NO.	PROJ. NO.	CALC. NO.	PAGE 5 OF
PREPARED BY P. RASMUSSEN	DATE 10/11/82	REF. DOCUMENTS:	
REVIEWED BY	DATE		
APPROVED BY	DATE		

$$\frac{STIFF}{STIFF} = \frac{BENT}{PIRO13A}$$

$$\frac{2.52 \text{ K}}{44^2 \text{ K}} = \frac{0.0029 \text{ I}_{PIRO13A}}{I_{RMC}}$$

$$\frac{\% \text{ MOMENT TRANSFERRED TO CONNECTION}}{0.01} = \frac{0.0029 (1.305)}{0.01} = 0.38$$

CIRCUIT CONNECTION WITH 10% OF MOMENT ACTING

$$\text{MOMENT WITHOUT TRANSFERRED STRESS MOMENT}$$

$$= 1.2(2.44) + \sqrt{2.44^2 \left[\left[\frac{1.2(0.65)}{4.25(0.65)} \right]^2 + \left[\frac{3.15(1.4)}{4.25(0.65)} \right]^2 \right]}$$

$$= 15.87 \text{ K}$$

$$M = 0.4(15.87) = 6.35 \text{ K}$$

$$\text{SHEAR} = 6.5 \text{ K}$$

INTERACTION

$$\frac{6.35}{7.92} + \frac{6.5}{13.7} = 1.28 > 1.0 \text{ N.G.}$$

ATTACHMENT TO

IMPACT ASSESSMENT FOR

PER 074, pg. 20

- D. Multiply the highest density obtained in "C", times the tray width in inches, times the depth of cables in the tray, as defined in IPCEA Publication P-54-440, and times $\pi/4$ (0.7854).
- E. A more exact figure than in "D" may be calculated by averaging the highest four or five densities, and using the average value instead of using the maximum density, provided a check is made to verify that heavier combinations will not occur.
- F. The fully loaded weight is equal to the weight of the tray plus the weight calculated in "C" or "D". (Each weight is to be for a one foot length).

4. Control Cable Trays

- A. Determine the weight per foot of each control cable.
- B. Determine the cross-sectional area of each control cable, based upon the diameter entered into the circuit and raceway schedule.
- C. Calculate the density of each control cable in pounds per foot per square inch.
- D. Multiply the highest density obtained in "C" times the tray width in inches, times the depth of the tray, times 0.40. (This assumes the tray will ultimately be filled up to a 40% level, possibly long after initial commercial operation.)
- E. A more exact figure than in "D" may be calculated by averaging several of the highest densities, and using the average value instead of the maximum density, provided a check is made to verify that heavier loading will not occur.
- F. The fully loaded weight is equal to the weight of the tray plus the weight calculated in "C" or "D". (Each weight is to be for a one foot length).

5. Instrumentation Cable Trays

Use the same procedure as that given for control cable trays.

6. Examples of Some Cable Weights in 24" Wide Tray with Random Fill

Type of Tray	Density of Heaviest Cables lb/ft/sq in	Max. Design Fill	Max. Ultimate Fill	Weight with Ultimate Fill lb/ft	Fully Loaded Weight incl. tray lb/ft(1)
Instru- mentation	0.743	30% of 4"	40% of 4"	28.5	33.2
Control	0.851	30% of 4"	40% of 4"	32.7	37.4
480 V (LV) Power	1.71	30% of 3" (1.15" depth)	30% of 3"	36.9	41.6



TPO

NUMBER C2.7

SHEET D2 OF 5

DATE June 1979

ED-22 (3-74)

7. Examples of Some Cable Weights in 24" Wide Tray with Maintained Spacing

<u>Type of Tray</u>	<u>Weight or Heaviest Cable lb/ft</u>	<u>Max. No. of Cables in Tray</u>	<u>Weight with Max No. of Cables lb/ft</u>	<u>Weight incl. Tray lb/ft(1)</u>
5 kV	9	5	45	49.7
15 kV Power	8	5	40	44.7

(1) Cable tray weight determined to be 4.7 lb/ft (See Calculation A).

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LAO 0053 4/74



NUMBER C2.7
SHEET D3 OF 5
DATE June 1979
ED-22 (3-74)



POTENTIAL FINDING REPORT
PVNGS QUALITY ASSURANCE VERIFICATION

PFR NO. 2426-PFR -075 REVISION ~~Issue~~-B

A. PREPARATION BY GA INITIATOR

AFFECTED ITEMS:

Signal Distribution Module SDM-A02H for Pressure Indicator 01JSINPI-0303Y

REQUIREMENT REFERENCE DOCUMENTS:

N/A

BASIC REQUIREMENT:

Actual location of SDM-A02H should be as indicated by cable termination card
1ERM36NCLxD1

DESCRIPTION OF POTENTIAL FINDING:

Signal distribution module SDM-A02H is shown located at 1JRMNB02C section of
main control board. Module is found at 1JRMNB02B section of main control
board. (Attachment)

PREPARED BY: R. E. Bunker DATE: 10-11-82

USE THE SPACE BELOW TO DOCUMENT ANY RE-REVIEW ACTION TAKEN BY INITIATOR ON THIS PFR.

SIGNATURE: _____ DATE: _____

3. REVIEW BY GA TASK LEADER

PFR NO. 2426-PFR -075REVISION B☐ REQUEST RE-REVIEW

BY: _____ DATE: _____

REASONS:

☒ AGREE PFR IS ~~VALID~~/INVALIDBY: Boyle DATE: 10/11/82☐ DISAGREE WITH INITIATOR

BY: _____ DATE: _____

REASONS:

Initiator has reviewed APS' response to Issue A and, based on additional information provided, concur that PFR is invalid. See Issue A, Part D. Revision B is a clarification of Page 1 of the PFR.

C., D. SEE ATTACHED SECTIONS C AND D (PAGE 3)

E. RECOMMENDATION BY FINDINGS REVIEW COMMITTEE

ADDITIONAL INFORMATION REQUIRED

DEFINITION:

☒ ADEQUATE ☐ INADEQUATE

VALIDITY:

☐ VALID ☒ INVALID

CLASSIFICATION:

☐ OBSERVATION ☐ FINDING

JUSTIFICATION

CLASSIFICATION CRITERION NO. RESULTING IN "FINDING" _____

COMMENT ON "OBSERVATION" OR "FINDING" CLASSIFICATION:

BY: S. D. Koutz DATE: 10/12/82 BY: _____ DATE: _____

F. GA PROJECT MANAGER

☒ ACCEPT☐ REJECTBY: MA Schen DATE: 10-13-82

POTENTIAL FINDING REPORT
PVNGS QUALITY ASSURANCE VERIFICATIONPFR NO. 2426-PFR -075 REVISION Issue A

A. PREPARATION BY GA INITIATOR

AFFECTED ITEMS:

01JSINPI-0303Y

REQUIREMENT REFERENCE DOCUMENTS:

Cable termination card 1ERM36NCLXD1

BASIC REQUIREMENT:

Plant location should agree with drawings

DESCRIPTION OF POTENTIAL FINDING:

Signal distribution module ~~SDM-A024~~ is shown located at 1JRMNB02C section of main control board. Module is found at 1JRMNB02B section of main control board.

(attachment)

PREPARED BY:

R. Darwin
R. Darwin/W. Long/R. Benham

DATE:

9/17/82

USE THE SPACE BELOW TO DOCUMENT ANY RE-REVIEW ACTION TAKEN BY INITIATOR ON THIS PFR.

SIGNATURE: _____

DATE: _____

B. REVIEW BY GA TASK LEADER

PFR NO. 2426-PFR

-075 pg 4

REVISION

Issue A

☐ REQUEST RE-REVIEW
REASONS:

BY: _____ DATE: _____

☒ AGREE PF IS VALID/~~INVALID~~
☐ DISAGREE WITH INITIATOR
REASONS:

BY: Hooper DATE: 9/17/82
BY: _____ DATE: _____

C., D. SEE ATTACHED SECTIONS C AND D (PAGE 3)

E. RECOMMENDATION BY FINDINGS REVIEW COMMITTEE

ADDITIONAL INFORMATION REQUIRED

DEFINITION: ☐ ADEQUATE ☐ INADEQUATE
VALIDITY: ☐ VALID ☐ INVALID
CLASSIFICATION: ☐ OBSERVATION ☐ FINDING

JUSTIFICATION

CLASSIFICATION CRITERION NO. RESULTING IN "FINDING" _____

COMMENT ON "OBSERVATION" OR "FINDING" CLASSIFICATION:

BY: _____ DATE: _____ BY: _____ DATE: _____

F. GA PROJECT MANAGER

☐ ACCEPT
☐ REJECT

BY: _____ DATE: _____

C. REVIEW BY ORIGINAL DESIGN ORGANIZATION

PFR NO.

075

pg 5

REVISION A

☐ AGREE☒ DISAGREE THAT POTENTIAL FINDING IS ACCURATE

BY:



DATE: 10-4-82

IF THE "DISAGREE" BLOCK WAS CHECKED, USE THE SPACE BELOW TO PROVIDE INFORMATION THAT WOULD IMPROVE ACCURACY OR DEFINITION. (USE BACK FOR ADDITIONAL SPACE.)

The location number shown on the termination card is the last raceway "via", not the location of the instrument.

There is no "N" train "X" service level penetration in the B02B Compartment. Therefore the cable enters through 1EZJ2ANKXVNS, located in the B02C Compartment and terminates at module SDM-A02H, located in the B02B Compartment. This information is noted on the termination card in the "Design Detail" block.

D. REVIEW BY GA INITIATOR

☒ AGREE PF IS INVALID

REASON:

THE TERMINATION CARD STATES THE "LOCATION OF TERMINATION" IS AT B02C AND THIS IS MISLEADING. ALSO THE DESIGN DETAIL BOX INDICATES TERMINATION AT SDM-A02H & SAYS NOTHING ABOUT B02B. THE APS INFORMATION PROVIDED CLARIFIES

BY:



DATE:

10-8-82

THIS CONFUSION AND THE RECLASSIFICATION TO "INVALID" IS CONCURRED WITH.

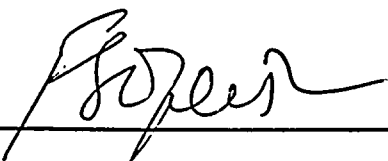
REVIEW BY GA TASK LEADER

☒ AGREE PF IS INVALID

REASON:

Concur with Initiator's recommendation to invalidate PFR based on additional info provided by APS.

BY:



DATE:

10/11/82

FW 1ERM36NC1XD1 03 BK-BLACK 01 0001 14AP81 2576
COM. TERMINATION NUMBER REV. TERMINATION CODE SEPARATION GROUP AND COLOR NO. OF CABLES NO. OF CONNECTIONS DATE ISSUED ICD ISSUE NO.

EC 1ERM36NC1XD1 VD2 85.22
COM. CABLE NUMBER CABLE CODE TERMINATION DESCRIPTION ACCOUNT CODE

TERMINATION DESIGN DETAILS FLD TO TERMINATE AT MODULE SDM-A02H

LOCATION OF TERMINATION: SHOULD BE IN JRMNB02B

EC 1JRMNB02C CB CONTROL BLDG UNIT 1.293 3A FI 14
COM. LOCATION NUMBER LOCATION CODE LOCATION DESCRIPTION

LOCATION DESIGN DETAILS MAIN CONT PNL ESF SYSTEM

EK 1EZJ2ANKXVNS 13EZJC09 00 VJ200067 03
LAST RACEWAY LAYOUT DRAWING REV. CONNECT DRAWING REV. VENDOR DRAWING REV.

THE CONDUCTORS MUST BE CONNECTED TO THE FOLLOWING POINTS:

BLOCK	POINT	S	COLOR	WIRE NO.	BLOCK	POINT	S	COLOR	WIRE NO.	BLOCK	POINT	S	COLOR	WIRE NO.
RECP	T1		BK	PLUG										

GEWKDC 1ERM36NC1XD1 03 CC
16 20-21 22-23
INSTALLER MUST COMPLETE SPACES 40 THRU 53 SIGN AND DATE
NO. OF CONNECTIONS CRIMP TOOL 1899999

INSTALLED BY Jeff D. Baird DATE INSTALLED 10/5/01
SIGNATURE

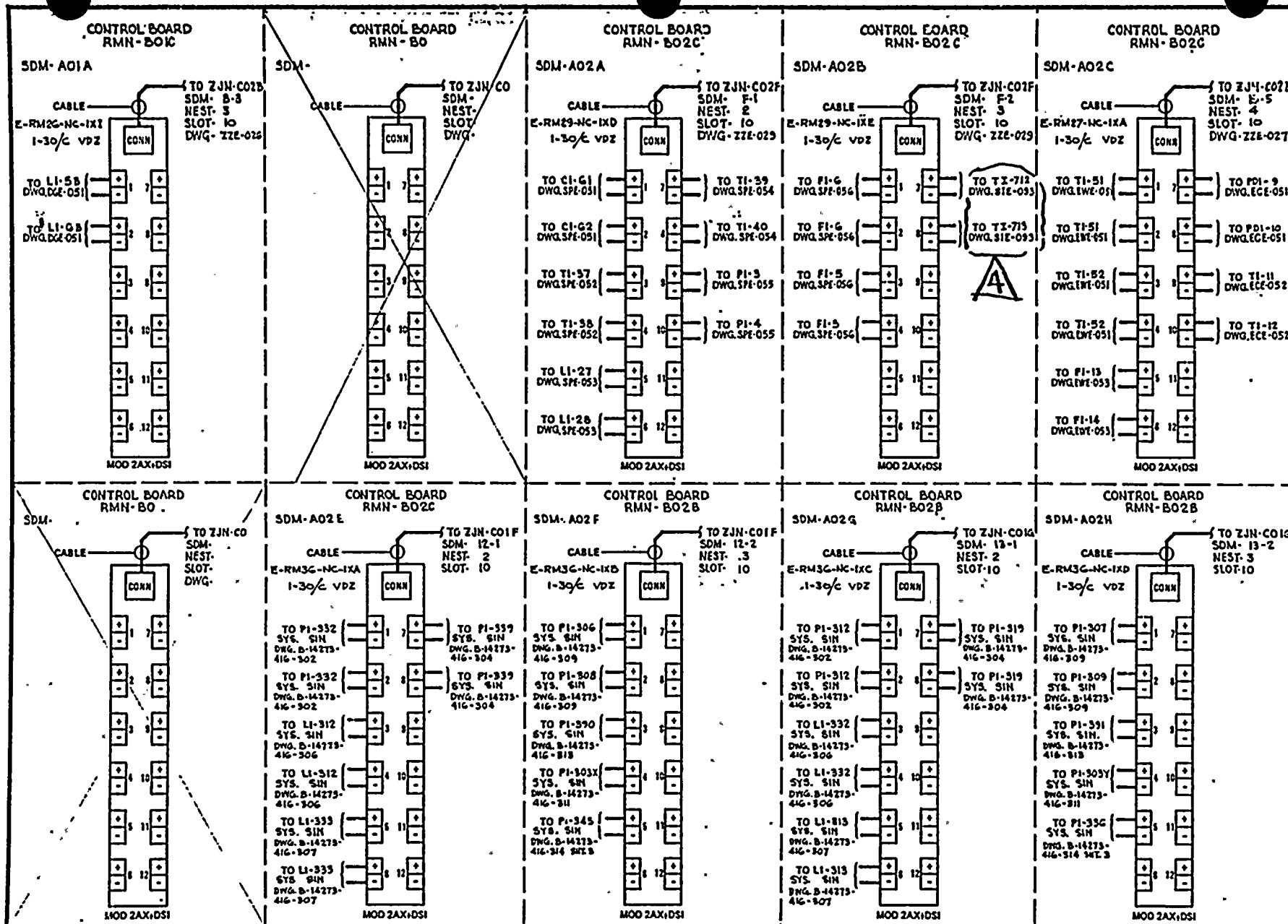
CONTROL AND TRACKING SYSTEM
TERMINATION INSTALLATION CARD



Attachment to
2426-PFR-075

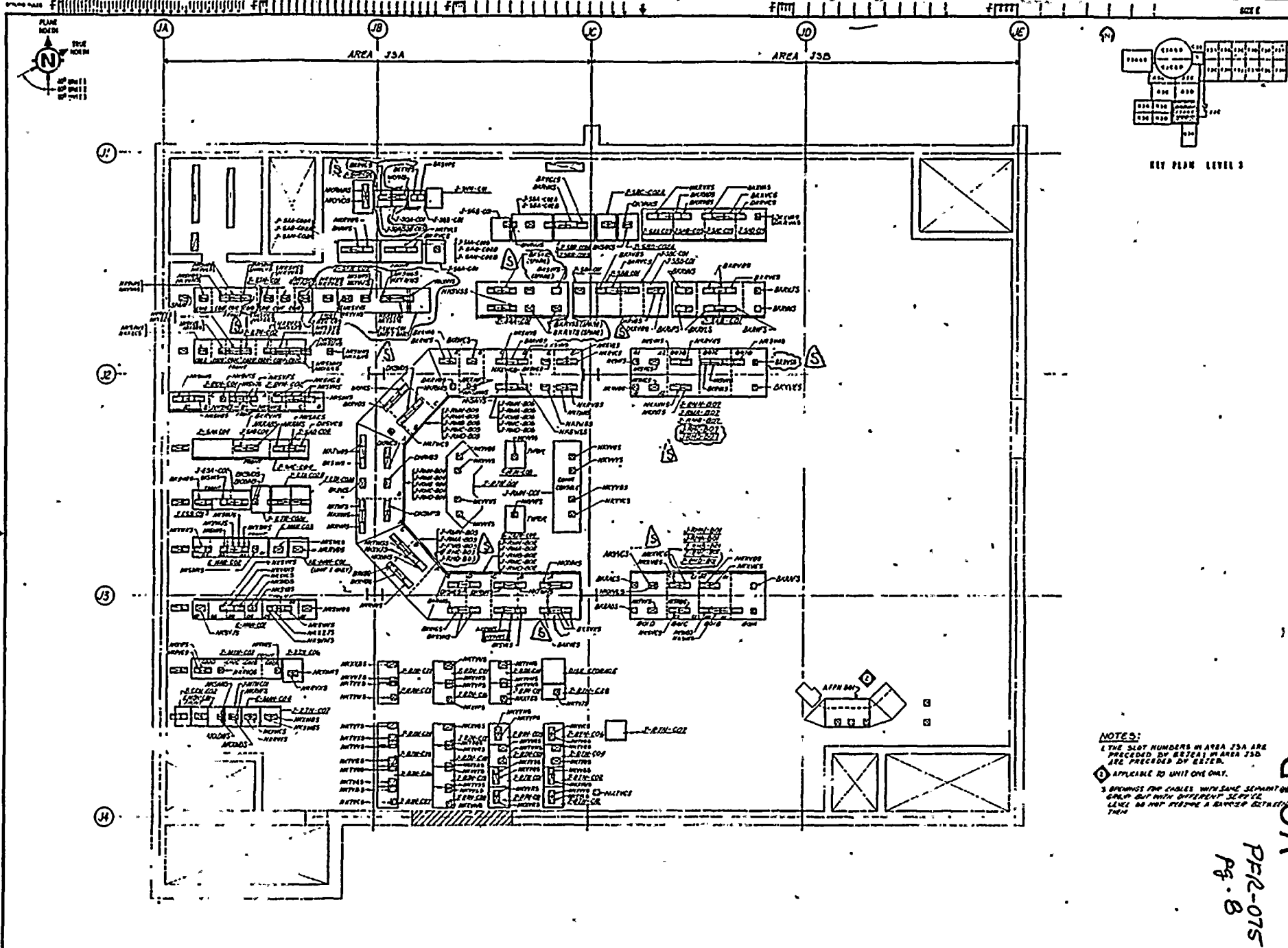
PI 303Y

This drawing has been produced by Bechtel and is the property of the PARTICIPANTS in the ARIZONA NUCLEAR POWER PROJECT. Use of this drawing and the design depicted thereon for any purpose other than that related to the Arizona Nuclear Power Project is prohibited.



VOID
NOT FOR CONSTRUCTION
PF2-075
A3.7

<div> <div>4 INCORP DGN#1</div> <div>3 FOR ADDITIONAL INFORMATION</div> <div>2 ADDED CABLE NO'S</div> <div>1 REVISED AS INDICATED</div> <div>0 ISSUED FOR CONSTRUCTION</div> </div>										<div> <div>BECHTEL</div> <div>LOS ANGELES</div> <div>ARIZONA NUCLEAR POWER PROJECT</div> <div>PALO VERDE NUCLEAR</div> <div>GENERATING STATION</div> </div>										<div>INSTRUMENT LOOP DIAGRAM</div> <div>DISTRIBUTION MODULE DEVICE WIRING</div> <div>CONTROL ROOM CONTROL BOARDS</div>				<div>SCALE NONE</div> <div>DATE & PCL</div>		<div>JOB NO.</div> <div>10107</div>		<div>DRAWING NO.</div> <div>13-1-ZZE-036</div>		<div>REV.</div> <div>4</div>	
DWG. NO.	REFERENCE	NO.	DATE	BY/CHK	DATE	BY/CHK	DATE	BY/CHK	DATE	BY/CHK	DATE	BY/CHK	DATE	BY/CHK	DATE	BY/CHK	DATE	BY/CHK	DATE	BY/CHK	DATE	BY/CHK	DATE	BY/CHK							



NOTES:
 1 THE SLOT NUMBERS IN AREA J3A ARE PRECEDED BY J3A. IN AREA J3B ARE PRECEDED BY J3B.
 2 APPLICABLE TO UNIT ONE ONLY.
 3 DRAWINGS FOR CABLES WITH SAME SEPARATION GROUP BUT WITH DIFFERENT SERVICE LENGTH DO NOT REQUIRE A SEPARATE DETAILING.

PR-075
 Pg. 8

		BECHTEL LOS ANGELES		NUCLEAR SAFETY RELATED	
ARIZONA NUCLEAR POWER PROJECT PALO VERDE NUCLEAR GENERATING STATION				CONTROL BLDG FLOOR OPENINGS FOR CABLE AT EL 140'-0"	
REV. 12-1-68				13 E 24C P40	

POTENTIAL FINDING REPORT
PVNGS QUALITY ASSURANCE VERIFICATION

PFR NO. 2426-PFR -076 REVISION Issue A.

A. PREPARATION BY GA INITIATOR

AFFECTED ITEMS:

Pressurizer Supports for Units 2 and 3.

REQUIREMENT REFERENCE DOCUMENTS:

CE Drawing 78373-671-001, Rev. 1

BASIC REQUIREMENT:

Field installation should correspond to detailed drawings.

DESCRIPTION OF POTENTIAL FINDING:

CE Drawing 78373-671-001, Rev. 1 shows the dimension from the safety valve nozzle on top of the pressurizer to the horizontal centerline of the shear lug as 144". The measurement taken in the field is 37". (*Attachments - 2 sheets*)

PREPARED BY: P. Rasmusson *P. Rasmusson* DATE: 9/17/82

USE THE SPACE BELOW TO DOCUMENT ANY RE-REVIEW ACTION TAKEN BY INITIATOR ON THIS PFR.

SIGNATURE: _____ DATE: _____

B. REVIEW BY GA TASK LEADER

PFR NO. 2426-PFR - 076

REVISION ^{Issue} A

☐ REQUEST RE-REVIEW
REASONS:

BY: _____ DATE: _____

☒ AGREE PF IS VALID/~~INVALID~~

☐ DISAGREE WITH INITIATOR
REASONS:

BY: F. Hopler DATE: 9/17/82

BY: _____ DATE: _____

C., D. SEE ATTACHED SECTIONS C AND D (PAGE 3)

E. RECOMMENDATION BY FINDINGS REVIEW COMMITTEE

ADDITIONAL INFORMATION REQUIRED

DEFINITION: ☒ ADEQUATE ☐ INADEQUATE
VALIDITY: ☒ VALID ☐ INVALID
CLASSIFICATION: ☒ OBSERVATION ☐ FINDING

JUSTIFICATION

CLASSIFICATION CRITERION NO. RESULTING IN "FINDING" _____

COMMENT ON "OBSERVATION" OR "FINDING" CLASSIFICATION:

Documentation error but hardware is acceptable

BY: S. D. Koutz DATE: 10/7/82

BY: _____ DATE: _____

F. GA PROJECT MANAGER

☒ ACCEPT
☐ REJECT

BY: [Signature] DATE: 10-7-82

☒ AGREE ☐ DISAGREE THAT POTENTIAL FINDING IS ACCURATEBY: U. Lick DATE: 9-30-82

IF THE "DISAGREE" BLOCK WAS CHECKED, USE THE SPACE BELOW TO PROVIDE INFORMATION THAT WOULD IMPROVE ACCURACY OR DEFINITION. (USE BACK FOR ADDITIONAL SPACE.)

CE drawing 78373-671-001 Rev. 1 is no longer valid and will be voided (BPC log N.001-6.04-6). For the as-built dimension for Units 1 and 2, refer to the Pressurizer Instruction Manual, BPC log N.001-6.04-32, drawings 78373-661-001 Rev. 2 and 79373-661-001 Rev. 2, respectively. For the Unit 3 as-built condition refer to BPC log N.001-6.04-72, CE drawing 6.5373-661-001 Rev. 1. These referenced drawings indicate the subject dimension as 37 inches.

D. REVIEW BY GA INITIATOR

☐ AGREE PF IS INVALID

REASON:

BY: _____ DATE: _____

REVIEW BY GA TASK LEADER

☐ AGREE PF IS INVALID

REASON:

BY: _____ DATE: _____

DETAIL C (G-3)
SCALE 6"=12"

36.40

370°

NOZZLE SCHEDULE

NOZZLE	NO. REQD	SIZE	SCH	END PRP	LOCATION
MANWAY	1	16" ID	—	FLANGED	TOP HEAD
SURGE	1	12"	160	BUTT WELD	BOT HEAD
SPRAY	1	4"	130	BUTT WELD	TOP HEAD
SAFETY VALVE	4	6"	160	BUTT WELD	TOP HEAD
INSTRUMENT	4	.75"	160	SOCKET	TOP HEAD
INSTRUMENT	2	.75"	160	SOCKET	BOT HEAD
TEMPERATURE	1	1"	160	SOCKET	S'ILL

TORREY PINES TECHNOLOGY
ARIZONA PUBLIC SERVICE—PVNGS

PACKAGE NO. 3M-21, PAGE 6 OF 13
SYSTEM PRIMARY COOLANT
TAG NUMBERS 3M-PCE-X02-Q1A
REPRODUCED FROM N001-6.04-6-3
DON'S None
FOR'S None

REVISED BY BENTLEY IN ASSEMBLY
WITH G.E. LETTER V-CE-1465 (4-30-75)

PROJECT CONTROL
F.B. 4/6

IMPORTANT Approval of this document does not release the recipient from his responsibility for design or in purchase price measurement. All work shall be limited to advisory and authority of materials and/or equipment represented herein for the intended function.	
DATE RECEIVED	USAP/6
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DATE	7-14-75
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13-10407-N001-6.04-6-23

1 NOMENCLATURE

MATERIAL

MATERIAL SPEC

MATERIAL NOTES

LIST OF MATERIAL - QUANTITIES FOR

THIS DRAWING IS THE PROPERTY OF
CONSTRUCTION ENGINEERING INC. IT IS TO BE USED FOR THE DESIGN AND CONSTRUCTION OF THE PROJECT ONLY. IT IS NOT TO BE REPRODUCED OR COPIED IN ANY MANNER WITHOUT THE WRITTEN PERMISSION OF CONSTRUCTION ENGINEERING INC.

PRESSURIZER OUTLINE

ARIZONA PUBLIC SERVICE
96" ID PRESSURIZER

78373-671-001

SCALE AS NOTED

CONT. 78373

SHEET

ATTACHMENT 1 Pg. 4
2026 - PFE-076 A

NOT FOR CONSTRUCTION

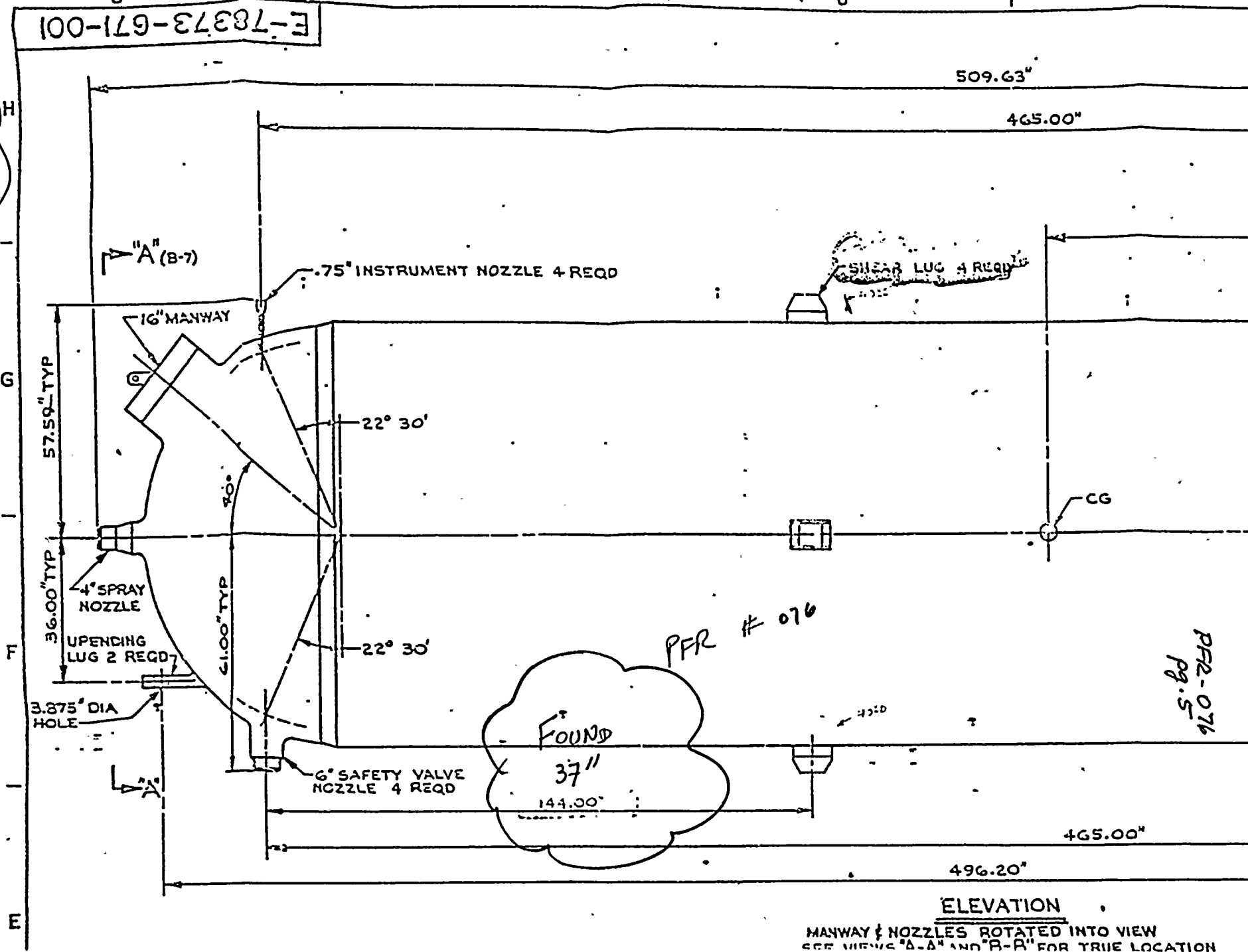
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OROMETRIC TOLERANCES FOR
MACHINED SURFACES UNLESS
SPECIFIED ON DRAWING

SYMBOL	DESCRIPTION	TOL.
1	FLATNESS	0.015"
2	STRAIGHTNESS	0.015"
3	CIRCULARITY	0.015"
4	SPINDLE LINE	0.015"
5	PROFILE OF SURFACE	0.015"
6	PARALLELISM	0.015"
7	PERPENDICULARITY	0.015"
8	ANGULARITY	0.015"
9	POSITION	0.015"
10	ORIGIN	0.015"
11	THEORETICAL POINT	0.015"
12	THEORETICAL LINE	0.015"
13	THEORETICAL SURFACE	0.015"
14	THEORETICAL AXIS	0.015"
15	THEORETICAL CENTER	0.015"
16	THEORETICAL POINT	0.015"
17	THEORETICAL LINE	0.015"
18	THEORETICAL SURFACE	0.015"
19	THEORETICAL AXIS	0.015"
20	THEORETICAL CENTER	0.015"

Attachment 1
24-26 - PFR-076A



IMPACT ASSESSMENT

PFR NO. 2426-PFR-076 REVISION Issue A

AFFECTED ITEM:

Pressurized Supports for Units 2 and 3

A. PREPARATION BY GA INITIATOR:

1. WHICH OF THE FIRST TWO POTENTIAL FINDING CLASSIFICATION CRITERIA APPLIES TO THIS PFR?

1 ☐, 2 ☐,

2. IN WHAT WAY MIGHT A SUBSTANTIAL SAFETY HAZARD BE CREATED AS A RESULT OF THE VIOLATION, DISCREPANCY OR ERROR (IF 1 OR 2 ABOVE WAS CHECKED)?:

3. OTHER COMMENTS: The "Analytical Report for ANPP Unit 1 Pressurizer" CENC-1336, GA Log 4444-0499, contains the drawings used in the analysis of the pressurizer. This drawing, 78373-671-002, Rev. 5, uses the correct dimension of 37".

PREPARED BY:

~~ALAN M. DELOACH~~

P. Rasmusson
P. Rasmusson

DATE:

10/6/82

B. PREPARATION BY GA TASK LEADER:

1. COMMENT ON ABOVE REPLIES:

No impact on design since analysis was based on correct dimension.

2. DOES EVIDENCE EXIST OF MULTIPLE SIMILAR VIOLATIONS, DISCREPANCIES OR ERRORS? IF SO, LIST RELEVANT PFR NO'S:

N/A

3. IF POTENTIAL FINDING CLASSIFICATION CRITERIA 3, 4, OR 5 APPLIES, STATE WHICH ONE:

3 ☐, 4 ☐, 5 ☐

N/A

4. WHAT IS YOUR JUDGEMENT OF THE LIKELIHOOD OF MULTIPLE SIMILAR VIOLATIONS, DISCREPANCIES OR ERRORS ACTUALLY CREATING A SUBSTANTIAL SAFETY HAZARD - AND OF WHAT NATURE?

Not likely

5. OTHER COMMENTS:

PREPARED BY:

F. Hopler

DATE:

10/6/82

POTENTIAL FINDING REPORT
PVNGS QUALITY ASSURANCE VERIFICATION

PFR NO. 2426-PFR -077 REVISION Issue B

A. PREPARATION BY GA INITIATOR

AFFECTED ITEMS:

1EPBB-S04 4160V Swgr. (Overall assembly)
1JSIBZT-615 Motor Operator Position Transmitter
1JSIBZT-658 Motor Operator Position Transmitter (UNIT 1)
1JSIBZT-679 Motor Operator Position Transmitter
1JAFBZT-31 Motor Operator Position Transmitter

REQUIREMENT REFERENCE DOCUMENTS:

Spec. 13-EM-009, Sec. 4.6.9
Dwg. No. 13-J-ZZS-001, Rev. 0
Instructions for Instrument tagging

BASIC REQUIREMENT:

Equipment and instrument shall be identified with permanent tags in accordance with Spec. and Dwg. requirements.

DESCRIPTION OF POTENTIAL FINDING:

Switchgear assembly and instrument identification tags are missing in Unit 1

PREPARED BY: R. G. Benham *R. G. Benham* DATE: 10/13/82

USE THE SPACE BELOW TO DOCUMENT ANY RE-REVIEW ACTION TAKEN BY INITIATOR ON THIS PFR.

SIGNATURE: _____ DATE: _____

B. REVIEW BY GA TASK LEADER

PFR NO. 2426-PFR

077

REVISION B

☐ REQUEST RE-REVIEW

BY: _____ DATE: _____

REASONS:

☒ AGREE PF IS VALID/~~INVALID~~BY: Bojles DATE: 10/13/82☐ DISAGREE WITH INITIATOR

BY: _____ DATE: _____

REASONS:

Issue B is a clarification of Page 1 of
the PFR — no change in technical content.

C., D. SEE ATTACHED SECTIONS C AND D (PAGE 3)

E. RECOMMENDATION BY FINDINGS REVIEW COMMITTEE

ADDITIONAL INFORMATION REQUIRED

DEFINITION:

☒ ADEQUATE☐ INADEQUATE

VALIDITY:

☒ VALID☐ INVALID

CLASSIFICATION:

☒ OBSERVATION☐ FINDING

JUSTIFICATION

CLASSIFICATION CRITERION NO. RESULTING IN "FINDING" _____

COMMENT ON "OBSERVATION" OR "FINDING" CLASSIFICATION:

missing plant ID tag is a procedural
violation but there is no safety impact.

BY: S. L. Kouly DATE: 10/13/82

BY: _____ DATE: _____

F. GA PROJECT MANAGER

☒ ACCEPT☐ REJECTBY: W. S. [Signature] DATE: 10-13-82

POTENTIAL FINDING REPORT
PVNGS QUALITY ASSURANCE VERIFICATION

pg. 3

PFR NO. 2426-PFR -077 REVISION Issue A

A. PREPARATION BY GA INITIATOR

AFFECTED ITEMS:

1EPBB-S04 4160V Swgr. (Overall assembly)
1JSIBZT-615 Motor Operator Position Transmitter
1JSIBZT-658 Motor Operator Position Transmitter
1JSIBZT-679 Motor Operator Position Transmitter
1JAFBZT-31 Motor Operator Position Transmitter

(Unit 1)

REQUIREMENT REFERENCE DOCUMENTS:

Instrument Index 13-J-221-001

BASIC REQUIREMENT:

Item should have appropriate identification

DESCRIPTION OF POTENTIAL FINDING:

Plant identification missing (see attachments)

PREPARED BY: R. Benham, R. Darwin, W. Long DATE: 9/17/82

USE THE SPACE BELOW TO DOCUMENT ANY RE-REVIEW ACTION TAKEN BY INITIATOR ON THIS PFR.

SIGNATURE: _____ DATE: _____

B. REVIEW BY GA TASK LEADER

PFR NO. 2426-PFR

pg. 4
Issue A
077

REVISION

☐ REQUEST RE-REVIEW

BY: _____

DATE: _____

REASONS:

BY: _____

DATE: 9/17/82

☒ AGREE PF IS VALID/INVALID

☐ DISAGREE WITH INITIATOR

REASONS:

C., D. SEE ATTACHED SECTIONS C AND D (PAGE 3)

E. RECOMMENDATION BY FINDINGS REVIEW COMMITTEE

ADDITIONAL INFORMATION REQUIRED

DEFINITION:

☐ ADEQUATE

☐ INADEQUATE

VALIDITY:

☐ VALID

☐ INVALID

CLASSIFICATION:

☐ OBSERVATION

☐ FINDING

JUSTIFICATION

CLASSIFICATION CRITERION NO. RESULTING IN "FINDING" _____

COMMENT ON "OBSERVATION" OR "FINDING" CLASSIFICATION:

BY: _____

DATE: _____

BY: _____

DATE: _____

F. GA PROJECT MANAGER

☐ ACCEPT

☐ REJECT

BY: _____

DATE: _____

C. REVIEW BY ORIGINAL DESIGN ORGANIZATION

PFR NO.

077, pg. 5

REVISION A

☐ AGREE ☒ DISAGREE THAT POTENTIAL FINDING IS ACCURATEBY: U. SchDATE: 10-5-82

IF THE "DISAGREE" BLOCK WAS CHECKED, USE THE SPACE BELOW TO PROVIDE INFORMATION THAT WOULD IMPROVE ACCURACY OR DEFINITION. (USE BACK FOR ADDITIONAL SPACE.)

1. Specification 13-EM-009, Section 4.6.9.1 states the requirements for switchgear nameplates. Per these requirements each cubicle is to have a separate nameplate. Switchgear 1EPBB-S04 is tagged in accordance with this requirement.
2. The discrepancy concerning tagging of Motor Operator Position Transmitters is accurate.

D. REVIEW BY GA INITIATOR

☐ AGREE PF IS INVALID

REASON:

BY: _____ DATE: _____

REVIEW BY GA TASK LEADER

☐ AGREE PF IS INVALID

REASON:

BY: _____ DATE: _____

THE INITIATOR OF THIS PFR MAINTAINS THAT PART 1, WHEREIN 4160V SWITCHGEAR NO. 1E-PBB-504 WAS FOUND NOT TO HAVE A NAMEPLATE WITH THE EQUIPMENT TAG NUMBER, IS STILL A VALID PFR FOR THE FOLLOWING REASONS:

1. EACH SWITCHGEAR ASSEMBLY IS ASSIGNED A UNIQUE EQUIPMENT TAG NUMBER.
2. TABLE 4-1 OF SPEC. ~~4~~ #13-EM-009 INDICATES THE SWITCHGEAR #1E-PBB-504 WILL HAVE A NAMEPLATE & THAT IT WILL BE GREEN IN COLOR.

ALSO THE INITIATOR'S EXPERIENCE WITH MANY DIFFERENT PLANTS INDICATES THAT IT IS GOOD PRACTICE TO IDENTIFY THE OVERALL ASSEMBLY.

SEE TEL-CON-NOTES FOR A RECORD OF CONTACT MADE WITH APS (COPY ATTACHED).

4.6.9 Nameplates SWITCHGEAR

4.6.9.1 Engraved lamicoid nameplates shall be provided for each device and for each switchgear cubicle in accordance with a nameplate list to be furnished after award. Nameplates shall be furnished in accordance with Nameplate Standards Drawing 13-J-ZZS-002, attachment 4-2 and nameplate face color shall be as indicated in table 4-1.

4.6.9.2 Nameplates shall be securely fastened with threaded stainless steel machine screws.

4.6.10 Control Source

4.6.10.1 A continuous 125 or 48 V-dc wire control bus as shown on switchgear drawings insulated for 600 V and not smaller than No. 10 AWG shall be furnished and shall extend the entire length of the switchgear with terminals provided at each end for connection to the supply source. The bus shall be tapped at each breaker cubicle with the tap extended to a molded case circuit breaker of suitable capacity for the control circuit, including the breaker closing and trip circuits. | 2

4.6.10.2 Remote control circuits of each breaker shall be protected by a fuse on the positive side in addition to the cubicle circuit breaker. All required fuses shall be furnished. Fuse size shall be shown on or adjacent to the fuseholder.

4.6.11 Bus and Bus Taps

4.6.11.1 Bus bars shall be of copper or aluminum of sufficient size to carry the rated current continuously without exceeding the temperature rise specified in ANSI C37.20-1974 and adequate to withstand all mechanical and thermal stresses due to short circuit currents at least equal to those specified for the circuit breakers.

4.6.11.2 Bolted connections shall be silver plated.

4.6.11.3 Buses and bus connections shall be completely insulated with antihygroscopic track resistant material possessing flame retarding self-extinguishing properties. Suitable material with similar characteristics shall also be furnished for insulating bus joints between groups of units of the switchgear assembled in the field.

4.6.12 Grounding Bus

A copper grounding bus capable of carrying the rated short-circuit current of any circuit breaker in the assembly for 2 seconds shall extend the full length of each switchgear section. Each stationary unit shall be connected directly to the grounding bus. The frame of each circuit breaker unit shall be grounded through heavy multiple finger contacts at all times except when the contacts of the breaker primary | 2

EQUIPMENT LOG

BY SYSTEM/DISCIPLINE/TYPE/SEQUENCE/SAFETY/SUBSEQUENCE/UNIT

DATE 3/16/82
PAGE 947

UNIT: * - SYSTEM: * - DISC.: * - P.O.: * - ISI PROJLS: * - P&ID: * - STARTUP: * -

REMARKS	STORAGE RECENT LOCATION	PLAN CODE	ELECTRIC SCHEMATIC
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3LPBDS04	4.16KV CLASS 1E INDOOR SWGR	13EPDA002	Q1E	3PBO1	ZJ1B	13EM009	C 00	13B	3071.1
GE-	M-310880	150381	130880	.0	E009-024	.00	R-140981		
250 MVA					J1B-E01				

SYSTEM/DISC. PB/E G

Attachment to
2426-PFR-077

Attachment to
2426-PFR-077

INSTRUMENT NUMBER	SERVICE DESCRIPTION	LOGIC DIAG	LOOP DWG	PURCHASE ORDER NO	DATA SHEET	INST. LOCA- TION	DESIGN CLASS	INSTALL DETAIL	VENDOR INSTRUMENT NUMBER	ELECT. SCHEM. DIAG.					
02JSIBZT 0614	SI TK 1 ISOL	NA	VP	N-001	VP	SIF13601E	NA	NA	ZT614	NA	EL	NA	QF1	P	7
03JSIBZT 0614	SI TK 1 ISOL	NA	VP	N-001	VP	SIF13601E	NA	NA	ZT614	NA	EL	NA	QF1	P	7
01JSIBHS 0615	LPSI FLOW CONTROL TO RC 2A	NA	NA	J-200	NA	ZJF00901E	NA	NA		SIB007EL		RMBB02	QF1	J	6
02JSIBHS 0615	LPSI FLOW CONTROL TO RC 2A	NA	NA	J-200	NA	ZJF00901E	NA	NA		SIB007EL		RMBB02	QF1	J	6
03JSIBHS 0615	LPSI FLOW CONTROL TO RC 2A	NA	NA	J-200	NA	ZJF00901E	NA	NA		SIB007EL		RMBB02	QF1	J	6
01JSIBUV 0615	LPSI FLOW CONTROL TO RC 2A	NA	NA	N-001	VP	SIF20801B	NA	NA		SIB007EM	NA	N	QF1	P	6
02JSIBUV 0615	LPSI FLOW CONTROL TO RC 2A	NA	NA	N-001	VP	SIF20801B	NA	NA	<	SIB007EM	NA	N	QF1	P	6
03JSIBUV 0615	LPSI FLOW CONTROL TO RC 2A	NA	NA	N-001	VP	SIF20801B	NA	NA	<	SIB007EM	NA	N	QF1	P	6
01JSIBZI 0615	LPSI FLOW CONTROL TO RC 2A	NA	VP	J-200	NA	ZJF00901E	NA	NA	ZI615	SIB007EL		RMBB02	QF1	J	11
02JSIBZI 0615	LPSI FLOW CONTROL TO RC 2A	NA	VP	J-200	NA	ZJF00901E	NA	NA	ZI615	SIB007EL		RMBB02	QF1	J	11
03JSIBZI 0615	LPSI FLOW CONTROL TO RC 2A	NA	VP	J-200	NA	ZJF00901E	NA	NA	ZI615	SIB007EL		RMBB02	QF1	J	11
01JSIBZT 0615	LPSI FLOW CONTROL TO RC 2A	NA	VP	N-001	VP	SIF20801E	NA	NA	ZT615	SIB007EL	NA		QF1	P	7
02JSIBZT 0615	LPSI FLOW CONTROL TO RC 2A	NA	VP	N-001	VP	SIF20801E	NA	NA	ZT615	SIB007EL	NA		QF1	P	
03JSIBZT 0615	LPSI FLOW CONTROL TO RC 2A	NA	VP	N-001	VP	SIF20801E	NA	NA	ZT615	SIB007EL	NA		QF1	P	
01JSIBHS 0616	HPSI 2 FLOW CONTROL TO RC 2A	NA	NA	J-200	NA	ZJF00901E	NA	NA	NA	SIB011EL		RMBB02	QF1	J	11
02JSIBHS 0616	HPSI 2 FLOW CONTROL TO RC 2A	NA	NA	J-200	NA	ZJF00901E	NA	NA							
03JSIBHS 0616	HPSI 2 FLOW CONTROL TO RC 2A	NA	NA	J-200	NA	ZJF00901E	NA	NA							
01JSIBUV 0616	HPSI 2 FLOW CONTROL TO RC 2A	NA	NA	N-001	VP	SIF20401B	NA	NA							
02JSIBUV 0616	HPSI 2 FLOW CONTROL TO RC 2A	NA	NA	N-001	VP	SIF20401B	NA	NA							
03JSIBUV 0616	HPSI 2 FLOW CONTROL TO RC 2A	NA	NA	N-001	VP	SIF20401B	NA	NA							
01JSIBZI 0616	HPSI 2 FLOW CONTROL TO RC 2A	NA	NA	J-200	NA	ZJF00901E	NA	NA							
02JSIBZI 0616	HPSI 2 FLOW CONTROL TO RC 2A	NA	NA	J-200	NA	ZJF00901E	NA	NA							
03JSIBZI 0616	HPSI 2 FLOW CONTROL TO RC 2A	NA	NA	J-200	NA	ZJF00901E	NA	NA							
01JSIBZT 0616	HPSI 2 FLOW CONTROL TO RC 2A	NA	NA	N-001	VP	SIF20401E	NA	NA	ZT616	NA	CI	NA	QF1	P	11

PACKAGE NO. 1-E-2 PAGE OF
 SYSTEM Safety Injection System
 TAG NUMBERS 01JSIBZT 0615
 REPRODUCED FROM Instrument Index
 DCN'S N.A.
 FCR'S N.A.

ANPP
INSTRUMENT INDEXAttachment To
2426-PFR-077

PAGE 1759

INSTRUMENT NUMBER	SERVICE DESCRIPTION	LOGIC DIAG	LOOP DWC	PURCHASE ORDER NO	DATA SHEET	INST. LOCA- TION	DESIGN CLASS	INSTALL DETAIL	VENDOR INSTRUMENT NUMBER	ELECT. SCHEM. DIAG.						
02JSIAHV 0657	S/D CLG TEMP CONTROL TRAIN A	NA	NA	N-001	VP	SIF20701B	NA	NA	<	SIB027EM	NA	N	QF1	P	6	
03JSIAHV 0657	S/D CLG TEMP CONTROL TRAIN A	NA	NA	N-001	VP	SIF20701B	NA	NA	<	SIB027EM	NA	N	QF1	P	6	
01JSIAZI 0657	S/D CLG TEMP CONTROL TRAIN A	NA	VP	J-200	NA	ZJF00901E	NA	NA	ZI657	NA	EL	RMAB02	QF1	J	11	
02JSIAZI 0657	S/D CLG TEMP CONTROL TRAIN A	NA	VP	J-200	NA	ZJF00901E	NA	NA	ZI657	NA	EL	RMAB02	QF1	J	11	
03JSIAZI 0657	S/D CLG TEMP CONTROL TRAIN A	NA	VP	J-200	NA	ZJF00901E	NA	NA	ZI657	NA	EL	RMAB02	QF1	J	11	
01JSIAZT 0657	S/D CLG TEMP CONTROL TRAIN A	NA	VP	N-001	VP	SIF20701E	NA	NA	ZT657	NA	EL	NA	QF1	P	7	
02JSIAZT 0657	S/D CLG TEMP CONTROL TRAIN A	NA	VP	N-001	VP	SIF20701E	NA	NA								
03JSIAZT 0657	S/D CLG TEMP CONTROL TRAIN A	NA	VP	N-001	VP	SIF20701E	NA	NA								
01JSIBHS 0658	S/D CLG TEMP CONTROL TRAIN B	NA	NA	J-200	NA	ZJF00901E	NA	NA								
02JSIBHS 0658	S/D CLG TEMP CONTROL TRAIN B	NA	NA	J-200	NA	ZJF00901E	NA	NA								
03JSIBHS 0658	S/D CLG TEMP CONTROL TRAIN B	NA	NA	J-200	NA	ZJF00901E	NA	NA								
01JSIBHV 0658	S/D CLG TEMP CONTROL TRAIN B	NA	NA	N-001	VP	SIF20801B	NA	NA								
02JSIBHV 0658	S/D CLG TEMP CONTROL TRAIN B	NA	NA	N-001	VP	SIF20801B	NA	NA								
03JSIBHV 0658	S/D CLG TEMP CONTROL TRAIN B	NA	NA	N-001	VP	SIF20801B	NA	NA								
01JSIBZI 0658	S/D CLG TEMP CONTROL TRAIN B	NA	VP	J-200	NA	ZJF00901E	NA	NA	ZI658	NA	EL	RMBB02	QF1	J	11	
02JSIBZI 0658	S/D CLG TEMP CONTROL TRAIN B	NA	VP	J-200	NA	ZJF00901E	NA	NA	ZI658	NA	EL	RMBB02	QF1	J	11	
03JSIBZI 0658	S/D CLG TEMP CONTROL TRAIN B	NA	VP	J-200	NA	ZJF00901E	NA	NA	ZI658	NA	EL	RMBB02	QF1	J	11	
01JSIBZT 0658	S/D CLG TEMP CONTROL TRAIN B	NA	VP	N-001	VP	SIF20801E	NA	NA	ZT658	NA	EL	NA	QF1	P	7	
02JSIBZT 0658	S/D CLG TEMP CONTROL TRAIN B	NA	VP	N-001	VP	SIF20801E	NA	NA	ZT658	NA	EL	NA	QF1	P	7	
03JSIBZT 0658	S/D CLG TEMP CONTROL TRAIN B	NA	VP	N-001	VP	SIF20801E	NA	NA	ZT658	NA	EL	NA	QF1	P	7	
01JSIBHS 0659	TRAIN B RECIRC TO RWT	NA	NA	J-200	NA	ZJF00901E	NA	NA		SIB016EL	RMBB02	QF1	J	6		
02JSIBHS 0659	TRAIN B RECIRC TO RWT	NA	NA	J-200	NA	ZJF00901E	NA	NA		SIB016EL	RMBB02	QF1	J	6		
03JSIBHS 0659	TRAIN B RECIRC TO RWT	NA	NA	J-200	NA	ZJF00901E	NA	NA		SIB016EL	RMBB02	QF1	J	6		
01JSIBUV 0659	TRAIN B RECIRC TO RWT	NA	NA	N-001	VP	SIF20401B	NA	NA		SIB016ES	NA	N	QF1	P	6	

PACKAGE NO. 1-E-2, PAGE _____ OF _____
 SYSTEM Safety Injection System
 TAG NUMBERS 01JSIBZT 0658
 REPRODUCED FROM Instrument Index
 DCN'S N. A.
 PCB'S N. A.

SYSTEM / SEQUENCE

INSTRUMENT INDEX:

Attachment to
2426-PFR-077

PAGE 1765

INSTRUMENT NUMBER	SERVICE DESCRIPTION	LOGIC DIAG	LOOP DWC	PURCHASE ORDER NO	DATA SHEET	INST. LITERA- TURE	DESIGN CLASS	INSTALL DETAIL	VENDOR INSTRUMENT NUMBER	ELECT. SCHEM. DIAG.					
02JSIAZT 0678	S/D CLG HE ISOL TRAIN A	NA	VP	N-001	VP	SIF20701E	NA	NA	ZT678	SIB033EL	NA	QF1	P	7	
03JSIAZT 0678	S/D CLG HE ISOL TRAIN A	NA	VP	N-001	VP	SIF20701E	NA	NA	ZT678	SIB033EL	NA	QF1	P	7	
01JSIBHS 0679	S/D CLG HE ISOL TRAIN B	NA	NA	J-200	NA	ZJF00901E	NA	NA		SIB033EL	RMBB02	QF1	J	6	
02JSIBHS 0679	S/D CLG HE ISOL TRAIN B	NA	NA	J-200	NA	ZJF00901E	NA	NA		SIB033EL	RMBB02	QF			
03JSIBHS 0679	S/D CLG HE ISOL TRAIN B	NA	NA	J-200	NA	ZJF00901E	NA	NA		SIB033EL	RMBB02	QF			
01JSIBHV 0679	S/D CLG HE ISOL TRAIN B	NA	NA	N-001	VP	SIF20801B	NA	NA	<	SIB033EM	NA	QF1	P	6	
02JSIBHV 0679	S/D CLG HE ISOL TRAIN B	NA	NA	N-001	VP	SIF20801B	NA	NA	<	SIB033EM	NA	QF1	P	6	
03JSIBHV 0679	S/D CLG HE ISOL TRAIN B	NA	NA	N-001	VP	SIF20801B	NA	NA	<	SIB033EM	NA	QF1	P	6	
01JSIBZI 0679	S/D CLG HE ISOL TRAIN B	NA	VP	J-200	NA	ZJF00901E	NA	NA	ZI679	SIB033EL	RMBB07	QF1	J	11	
02JSIBZI 0679	S/D CLG HE ISOL TRAIN B	NA	VP	J-200	NA	ZJF00901E	NA	NA	ZI679	SIB033EL	RMBB07	QF1	J	11	
03JSIBZI 0679	S/D CLG HE ISOL TRAIN B	NA	VP	J-200	NA	ZJF00901E	NA	NA	ZI679	SIB033EL	RMBB07	QF1	J	11	
01JSIBZT 0679	S/D CLG HE ISOL TRAIN B	NA	VP	N-001	VP	SIF20801E	NA	NA	ZT679	SIB033EL	NA	QF1	P	7	
02JSIBZT 0679	S/D CLG HE ISOL TRAIN B	NA	VP	N-001	VP	SIF20801E	NA	NA	ZT679	SIB033EL	NA	QF1	P	7	
03JSIBZT 0679	S/D CLG HE ISOL TRAIN B	NA	VP	N-001	VP	SIF20801E	NA	NA	ZT679	SIB033EL	NA	QF1	P	7	
01JSIBHS 0680	SPRAY CHEM PP B DSCH TO CS PP	NA	NA	J-200	NA	ZJF00901E	NA	NA		SIB037EL	RMBB02	QF1	J	6	
02JSIBHS 0680	SPRAY CHEM PP B DSCH TO CS PP	NA	NA	J-200	NA	ZJF00901E	NA	NA		SIB037EL	RMBB02	QF1	J	6	
03JSIBHS 0680	SPRAY CHEM PP B DSCH TO CS PP	NA	NA	J-200	NA	ZJF00901E	NA	NA		SIB037EL	RMBB02	QF1	J	6	
01JSIBUV 0680	SPRAY CHEM PP B DSCH TO CS PP	NA	NA	N-001	VP	SIF21401B	NA	NA							
02JSIBUV 0680	SPRAY CHEM PP B DSCH TO CS PP	NA	NA	N-001	VP	SIF21401B	NA	NA							
03JSIBUV 0680	SPRAY CHEM PP B DSCH TO CS PP	NA	NA	N-001	VP	SIF21401B	NA	NA							
01JSIAHS 0681	SPRAY CHEM PP A DSCH TO CS PP	NA	NA	J-200	NA	ZJF00901E	NA	NA							
02JSIAHS 0681	SPRAY CHEM PP A DSCH TO CS PP	NA	NA	J-200	NA	ZJF00901E	NA	NA							
03JSIAHS 0681	SPRAY CHEM PP A DSCH TO CS PP	NA	NA	J-200	NA	ZJF00901E	NA	NA							
01JSIAUV 0681	SPRAY CHEM PP A DSCH TO CS PP	NA	NA	N-001	VP	SIF21401B	NA	NA							

PACKAGE NO. 1-E-2, PAGE OF
SYSTEM Safety Injection System
TAG NUMBERS 01JSIBZT 0679
REPRODUCED FROM Instrument Index
DCN'S N.A.
FCR'S N.A.

SYSTEM / SEQUENCE

Attachment to
24-26-PFR-077

INSTRUMENT NUMBER	SERVICE DESCRIPTION	LOGIC DIAG	LOOP DWG	PURCHASE ORDER NO	DATA SHEET	INST. LOCA- TION	DESIGN CLASS	INSTALL DETAIL	VENDOR INSTRUMENT NUMBER	ELECT. SCHEM. DIAG		R C M V	R F V
01JAFBHS 0030D	AF REG VLV PP B TO SG 1-RS DR	L002NA	N-001	NA	ZJC03801E	NA	NA	VP	AFB003EL	ZJBE01	QF1	E	10
02JAFBHS 0030D	AF REG VLV PP B TO SG 1-RS DR	L002NA	N-001	NA	ZJC03801E	NA	NA	VP	AFB003EL	ZJBE01	QF1		
03JAFBHS 0030D	AF REG VLV PP B TO SG 1-RS DR	L002NA	N-001	NA	ZJC03801E	NA	NA	VP	AFB003EL	ZJBE01	QF1		
01JAFBHS 0030E	AF REG VLV PP B TO SG 1 DISC	L002NA	N-001	NA	Q1E	NA			AFB003EL	ZJBE02	QF2		12
02JAFBHS 0030E	AF REG VLV PP B TO SG 1 DISC	L002NA	N-001	NA	Q1E	NA			AFB003EL	ZJBE02			12
03JAFBHS 0030E	AF REG VLV PP B TO SG 1 DISC	L002NA	N-001	NA	Q1E	NA			AFB003EL	ZJBE02			12
01JAFBHV 0031	AF REG VLV PP B TO SG 2	L002NA	J-601A081060AFF13301C	NA	NA	NA	NA	NA	AFB003EM	NA	QF1	P	10
02JAFBHV 0031	AF REG VLV PP B TO SG 2	L002NA	J-601A081060AFF13301C	NA	NA	NA	NA	NA	AFB003EM		QF1	P	10
03JAFBHV 0031	AF REG VLV PP B TO SG 2	L002NA	J-601A081060AFF13301C	NA	NA	NA	NA	NA	AFB003EM		QF1	P	10
01JAFBZT 0031	AF REG VLV PP B TO SG 2	NA	E054J-601A081060AFF13101E	NA	NA	NA	NA	NA	NA	EL	NA	QF1	P 10
02JAFBZT 0031	AF REG VLV PP B TO SG 2	NA	E054J-601A081060AFF13101E	NA	NA	NA	NA	NA	NA	EL		QF1	P 10
03JAFBZT 0031	AF REG VLV PP B TO SG 2	NA	E054J-601A081060AFF13101E	NA	NA	NA	NA	NA	NA	EL		QF1	P 10
01JAFBHS 0031A	AF REG VLV PP B TO SG 2-CR	L002NA	J-200	NA	ZJF00901E	NA	NA	NA	AFB003EL	RM8B06	QF1	J	10
02JAFBHS 0031A	AF REG VLV PP B TO SG 2-CR	L002NA	J-200	NA	ZJF00901E	NA	NA					J	10
03JAFBHS 0031A	AF REG VLV PP B TO SG 2-CR	L002NA	J-200	NA	ZJF00901E	NA	NA					J	10
01JAFBZI 0031A	AF REG VLV PP B TO SG 2-CR	NA	E054J-200	NA	ZJF00901E	NA	NA					J	10
02JAFBZI 0031A	AF REG VLV PP B TO SG 2-CR	NA	E054J-200	NA	ZJF00901E	NA	NA						
03JAFBZI 0031A	AF REG VLV PP B TO SG 2-CR	NA	E054J-200	NA	ZJF00901E	NA	NA						
01JAFBHS 0031B	AF REG VLV PP B TO SG 2-RS	L002NA	N-001	NA	ZJC03801E	NA	NA						
02JAFBHS 0031B	AF REG VLV PP B TO SG 2-RS	L002NA	N-001	NA	ZJC03801E	NA	NA						
03JAFBHS 0031B	AF REG VLV PP B TO SG 2-RS	L002NA	N-001	NA	ZJC03801E	NA	NA						
01JAFBZI 0031B	AF REG VLV PP B TO SG 2-RS	NA	E054N-001	NA	ZJC03801E	NA	NA						
02JAFBZI 0031B	AF REG VLV PP B TO SG 2-RS	NA	E054N-001	NA	ZJC03801E	NA	NA						
03JAFBZI 0031B	AF REG VLV PP B TO SG 2-RS	NA	E054N-001	NA	ZJC03801E	NA	NA						

TORREY PINES TECHNOLOGY
ARIZONA PUBLIC SERVICE—PVNGS
 PACKAGE NO. 1-E-1, PAGE OF
 SYSTEM AUX FEEDWATER
 TAG NUMBERS 1JAFBZT 31
 REPRODUCED FROM INST. INDEX
 DCN'S NONE
 FCR'S NONE

FROM: _____ LOCATION: _____ DATE: _____

TO: Attachment to LOCATION: _____ DATE: _____

2426-PFR-077

PFR-077
Pg. 13

TELEPHONE COMMUNICATION RECORD

(PLEASE HAND LETTER LEGIBLY IN BLACK OR RED INK)

CALL INITIATED BY: BENHAM, PHELPS, RASMUSSEN AT GAC ☒ OTHER: _____

CALL RECEIVED BY: IDE OF APS AT GAC ☐ OTHER: _____

OTHER PARTICIPANTS: PENNICK, FORESTER, & WITTAS ALL APS

DATE: 10-12-82 TIME: 9:30A PROGRAM NAME: PVNG5 PROGRAM NUMBER: 2426

SUBJECT: DISCUSS QUESTIONS ON PFRs

SUMMARY: FIRST BENHAM DISCUSSED PFR NOS. 067, 077, & 086.

THE QUESTION ON 077 WAS WHAT WAS THE DATE OF THE
NCR PC-4703? MR. IDE INDICATED THIS DATE WAS
10-5-82. PFR 077 - FIRST PART DEALS WITH A MISSING
4160V SWITCHGEAR ASSEMBLY EQUIPMENT TAG NO. APS
FELT THIS WAS AN INVALID PFR & CITED SPEC
13EM-009 SECTION 4.6.9.1 AS BACK-UP. BENHAM POINTED OUT
THAT A UNIQUE NO. HAD BEEN ASSIGNED TO THE OVERALL
SWGR. ASSEMBLY BY THE EQUIPMENT LOG AND ALSO THAT
TABLE 4-1 OF SPEC. 13-EM-009 SPECIFIES THAT THE IDENTIFIERS
FOR THE SWGR. ASSEMBLY SHALL BE GREEN IN COLOR.
BASED ON THESE TWO POINTS TPT FEELS PFR IS INVALID.

ACTION ITEMS:	Date	Person
	Required	Responsible

DISTRIBUTION: PHELPS, OPLE

File No.: _____

IMPACT ASSESSMENT

PFR NO. 2426-PFR-077

REVISION

Issue X B *ADH 10-13-82*

pg. 14

AFFECTED ITEM: 1EPBB-S04 4160V Swgr (overall assembly); All position transmitters for MOVs UV-615, HV-658, HV-679, and HV-31.

A. PREPARATION BY GA INITIATOR:

1. WHICH OF THE FIRST TWO POTENTIAL FINDING CLASSIFICATION CRITERIA APPLIES TO THIS PFR?

Neither

1 ☐, 2 ☐,

2. IN WHAT WAY MIGHT A SUBSTANTIAL SAFETY HAZARD BE CREATED AS A RESULT OF THE VIOLATION, DISCREPANCY OR ERROR (IF 1 OR 2 ABOVE WAS CHECKED)?:

N/A

3. OTHER COMMENTS: This PFR points out a discrepancy which should be resolved by APS. This PFR is recommended to be classified as an "observation".

PREPARED BY: R. Benham *R Benham*

DATE: 10-13-82

B. PREPARATION BY GA TASK LEADER:

1. COMMENT ON ABOVE REPLIES:

Concur with Initiator's impact assessment.

2. DOES EVIDENCE EXIST OF MULTIPLE SIMILAR VIOLATIONS, DISCREPANCIES OR ERRORS? IF SO, LIST RELEVANT PFR NO'S: *PFR - 089 (missing tags on valves)*

3. IF POTENTIAL FINDING CLASSIFICATION CRITERIA 3, 4, OR 5 APPLIES, STATE WHICH ONE:

3 ☐, 4 ☐, 5 ☐

4. WHAT IS YOUR JUDGEMENT OF THE LIKELIHOOD OF MULTIPLE SIMILAR VIOLATIONS, DISCREPANCIES OR ERRORS ACTUALLY CREATING A SUBSTANTIAL SAFETY HAZARD - AND OF WHAT NATURE?

Not likely - these are the only instruments with missing tags in Unit 1 uncovered during the walkdown. The missing tag on the swgr appears to be an isolated case.

5. OTHER COMMENTS:

PREPARED BY: *F. Lopez*

DATE: 10/13/82

POTENTIAL FINDING REPORT
PVNGS QUALITY ASSURANCE VERIFICATION

PFR NO. 2426-PFR -078 REVISION Issue B

A. PREPARATION BY GA INITIATOR

AFFECTED ITEMS:

01JS1BTE-0303Y

REQUIREMENT REFERENCE DOCUMENTS:

N/A

BASIC REQUIREMENT:

Raceway should have appropriate identification in accordance with accepted engineering practice.

DESCRIPTION OF POTENTIAL FINDING:

First five letters of last raceway designator is missing. See cable termination card 1ESIB1BC2XA1.

PREPARED BY: R. Benham *R Benham* DATE: 10-6-82

USE THE SPACE BELOW TO DOCUMENT ANY RE-REVIEW ACTION TAKEN BY INITIATOR ON THIS PFR.

SIGNATURE: _____ DATE: _____

B. REVIEW BY GA TASK LEADER

PFR NO. 2426-PFR - 078

REVISION B

☐ REQUEST RE-REVIEW

BY: _____ DATE: _____

REASONS:

☒ AGREE PFR IS ~~VALID~~/INVALIDBY: FSOphd DATE: 10/6/82☐ DISAGREE WITH INITIATOR

BY: _____ DATE: _____

REASONS:

Initiators have reviewed APS' response to Issue A and, based on additional information provided, concur that PFR is invalid. See Issue A, Part D. Revision B is a clarification of Page 1 of the PFR.

C., D. SEE ATTACHED SECTIONS C AND D (PAGE 3)

E. RECOMMENDATION BY FINDINGS REVIEW COMMITTEE

ADDITIONAL INFORMATION REQUIRED

DEFINITION: ☒ ADEQUATE ☐ INADEQUATEVALIDITY: ☐ VALID ☒ INVALIDCLASSIFICATION: ☐ OBSERVATION ☐ FINDING

JUSTIFICATION

CLASSIFICATION CRITERION NO. RESULTING IN "FINDING" _____

COMMENT ON "OBSERVATION" OR "FINDING" CLASSIFICATION:

BY: S. L. Koutz DATE: 10/7/82 BY: _____ DATE: _____

F. GA PROJECT MANAGER

☒ ACCEPT☐ REJECTBY: MA [Signature] DATE: 10-7-82

POTENTIAL FINDING REPORT
PVNGS QUALITY ASSURANCE VERIFICATION

pg. 3

PFR NO. 2426-PFR -078 REVISION Issue A

A. PREPARATION BY GA INITIATOR

AFFECTED ITEMS:

01JSIBTE-0303Y

REQUIREMENT, REFERENCE DOCUMENTS:

Cable termination card 1ESIB1BC2XA1

BASIC REQUIREMENT:

Item should have appropriate identification

DESCRIPTION OF POTENTIAL FINDING:

First five letters of last raceway designator is missing (attachment)

PREPARED BY:

R. Benham
R. Benham/R. Darwin/W. Long

DATE: 9/17/02

USE THE SPACE BELOW TO DOCUMENT ANY RE-REVIEW ACTION TAKEN BY INITIATOR ON THIS PFR.

SIGNATURE: _____

DATE: _____

B. REVIEW BY GA TASK LEADER

PFR NO. 2426-PFR

078, pg. 4

REVISION

Issue A

☐ REQUEST RE-REVIEW
REASONS:

BY:

DATE:

☒ AGREE PF IS VALID/INVALID
☐ DISAGREE WITH INITIATOR
REASONS:

BY:

DATE:

9/17/82

C., D. SEE ATTACHED SECTIONS C AND D (PAGE 3)

E. RECOMMENDATION BY FINDINGS REVIEW COMMITTEE

ADDITIONAL INFORMATION REQUIRED

DEFINITION: ☐ ADEQUATE ☐ INADEQUATE
VALIDITY: ☐ VALID ☐ INVALID
CLASSIFICATION: ☐ OBSERVATION ☐ FINDING

JUSTIFICATION

CLASSIFICATION CRITERION NO. RESULTING IN "FINDING" _____

COMMENT ON "OBSERVATION" OR "FINDING" CLASSIFICATION:

BY: _____ DATE: _____

BY: _____ DATE: _____

F. GA PROJECT MANAGER

☐ ACCEPT
☐ REJECT

BY: _____ DATE: _____

C. REVIEW BY ORIGINAL DESIGN ORGANIZATION

PFR NO.

078, pg. 5

REVISION

A

☐ AGREE☒ DISAGREE THAT POTENTIAL FINDING IS ACCURATE

BY:

DATE: 9-30-82

IF THE "DISAGREE" BLOCK WAS CHECKED, USE THE SPACE BELOW TO PROVIDE INFORMATION THAT WOULD IMPROVE ACCURACY OR DEFINITION. (USE BACK FOR ADDITIONAL SPACE.)

Although the first five letters of the last raceway designation is missing in the referenced case, this is not a violation of project criteria. WP/P-QCI 251.0, appendix I Section 8, Item 7 states, "...if proper raceway ID has been installed but has been damaged or is partially peeled, it is acceptable for buy-off. The ID must be readable. A final review of all ID markers will be made by Construction prior to turnover to APS to ensure all damaged markers are replaced". WP/P-QCI 31.0 Revision 10, Section 7.5.7 states, "Check all components are properly tagged and labeled". Conduit and raceways are transferred as part of an area. The referenced conduit is part of Area ZA-01C, which has not been transferred to APS. At the time of the final walkdown of this area, all such discrepancies will be noted and corrected.

D. REVIEW BY GA INITIATOR

☒ AGREE PF IS INVALID

REASON:

I concur with the information provided by APS, above.

BY:

DATE: 10-5-82

REVIEW BY GA TASK LEADER

☒ AGREE PF IS INVALID

REASON:

Concur with Initiator's recommendation to invalidate this PFR.

BY:

DATE:

10/6/82

EC 1EST81BC2XA C362 85.23 TK
COM. CABLE NUMBER CABLE CODE ACCOUNT CODE

TERMINATION
DESIGN
DETAILS

TERMINATION DESCRIPTION

Attachment to
2426-PFR-078
P76

LOCATION OF TERMINATION

EC 1JS88C02B JC CONTROL BLDG UNIT 1, 283 3A EL14
COM. LOCATION NUMBER LOCATION CODE LOCATION DESCRIPTION

LOCATION
DESIGN
DETAILS

PLANT PROT SYS CAB

EK 1F7J2ARKYG1S 13F7JC09 01
LAST RACEWAY LAYOUT DRAWING REV. CONNECT DRAWING REV. VENDOR DRAWING REV.

THE CONDUCTORS MUST BE CONNECTED TO THE FOLLOWING POINTS:

BLOCK	POINT	S	COLOR	WIRE NO.	BLOCK	POINT	S	COLOR	WIRE NO.	BLOCK	POINT	S	COLOR	WIRE NO.
TB3*	61		BK	A	RETENTION TIME LT NOV 1 2 1981 COMPUTER									
TB3*	62		WH	B										
TB3*	63		RD	C										
TB3*	64		SHLD	*SHLD										

INSTALLER MUST COMPLETE SPACES 48 THRU 53 SIGN AND DATE

GEWKDC 1EST81BC2XA2 05 CC
NO. OF CONNECTIONS NO. OF CABLES NO. OF CONNECTIONS
CRIMP TOOL 1065917
INSTALLED BY M.H. Sager E1-1138 SIGNATURE DATE INSTALLED 10/2/81

CONTROL AND TRACKING SYSTEM
TERMINATION INSTALLATION CARD



EW 1EST81BC2XA1 03 GR-GREEN 01 0004 28AUG81 3283
COM. TERMINATION NUMBER REV. TERMINATION CODE SEPARATION GROUP AND COLOR NO. OF CABLES NO. OF CONNECTIONS DATE ISSUED ICD ISSUE NO.

EC 1EST81BC2XA C362 85.23
COM. CABLE NUMBER CABLE CODE ACCOUNT CODE

TERMINATION
DESIGN
DETAILS

TERMINATION DESCRIPTION

LOCATION OF TERMINATION

EC 1JS88C02B JC CONTROL BLDG UNIT 1, 283 3A EL14
COM. LOCATION NUMBER LOCATION CODE LOCATION DESCRIPTION

LOCATION
DESIGN
DETAILS

PROCESS VMTR

ER 1F7J2ARKYG1S 13F7JC09 05
LAST RACEWAY LAYOUT DRAWING REV.

THE CONDUCTORS MUST BE CONNECTED TO THE FOLLOWING POINTS:

BLOCK	POINT	S	COLOR	WIRE NO.	BLOCK	POINT	S	COLOR	WIRE NO.	BLOCK	POINT	S	COLOR	WIRE NO.
TE**	01		BK	A	RETENTION TIME LT MAR 2 4 1982 COMPUTER									
TE**	02		WH	B										
TE**	03		RD	C										
TE**	04		SHLD	*SHLD										

INSTALLER MUST COMPLETE SPACES 48 THRU 53 SIGN AND DATE

GEWKDC 1EST81BC2XA1 03 CC
NO. OF CONNECTIONS NO. OF CABLES NO. OF CONNECTIONS
CRIMP TOOL 130924
INSTALLED BY Roy 2951 SIGNATURE DATE INSTALLED 3/6/82

PACKAGE NO. 1-E-2, PAGE OF
SYSTEM SMARTY INJECTION
TAG NUMBERS 1EST81BC2XA
REPRODUCED FROM TERMINATION CARDS
DCN'S N/A
FCR'S N/A

RECEIVED
MAR 23 1982
QC-DCC

CONTROL AND TRACKING SYSTEM
TERMINATION INSTALLATION CARD



STO

POTENTIAL FINDING REPORT
PVNGS QUALITY ASSURANCE VERIFICATION

PFR NO. 2426-PFR -079 REVISION ~~Issue C~~ ^{Rev B 10-12-82}

A. PREPARATION BY GA INITIATOR

AFFECTED ITEMS:

Unit 2 instruments, as follows:

1. Temperature elements: 01JAFNTE080 and 02JAFETE082
2. Valve Position Transmitters: 02JAFBZT0031, 02JSIBZT0658, and 02JSIBZT0615

REQUIREMENT REFERENCE DOCUMENTS:

Instrument index 13-J-ZZI-001, Rev. 13

P&I Diagram 13-M-AFP-001, Rev. 10

Drawing No. 13-J-ZZS-001, Rev. 0, Instructions for Instrument Tagging (Rev. C)

BASIC REQUIREMENT:

Instruments shall be identified with permanent tags in accordance with Drawing No. 13-J-ZZS-001, Rev. 0, Copy attached. (Rev. C)

DESCRIPTION OF POTENTIAL FINDING:

Instrument identification tags are missing on the above instruments in Unit 2.

~~[NOTE: Rev. B clarifies page 1 of the PFR and deletes reference to valves HV-031, HV-058, and HV-679, which have been included in other PFRs already.]~~

^{Rev B}
10-12-82

PREPARED BY: R. G. Bushman DATE: 10-11-82

USE THE SPACE BELOW TO DOCUMENT ANY RE-REVIEW ACTION TAKEN BY INITIATOR ON THIS PFR.

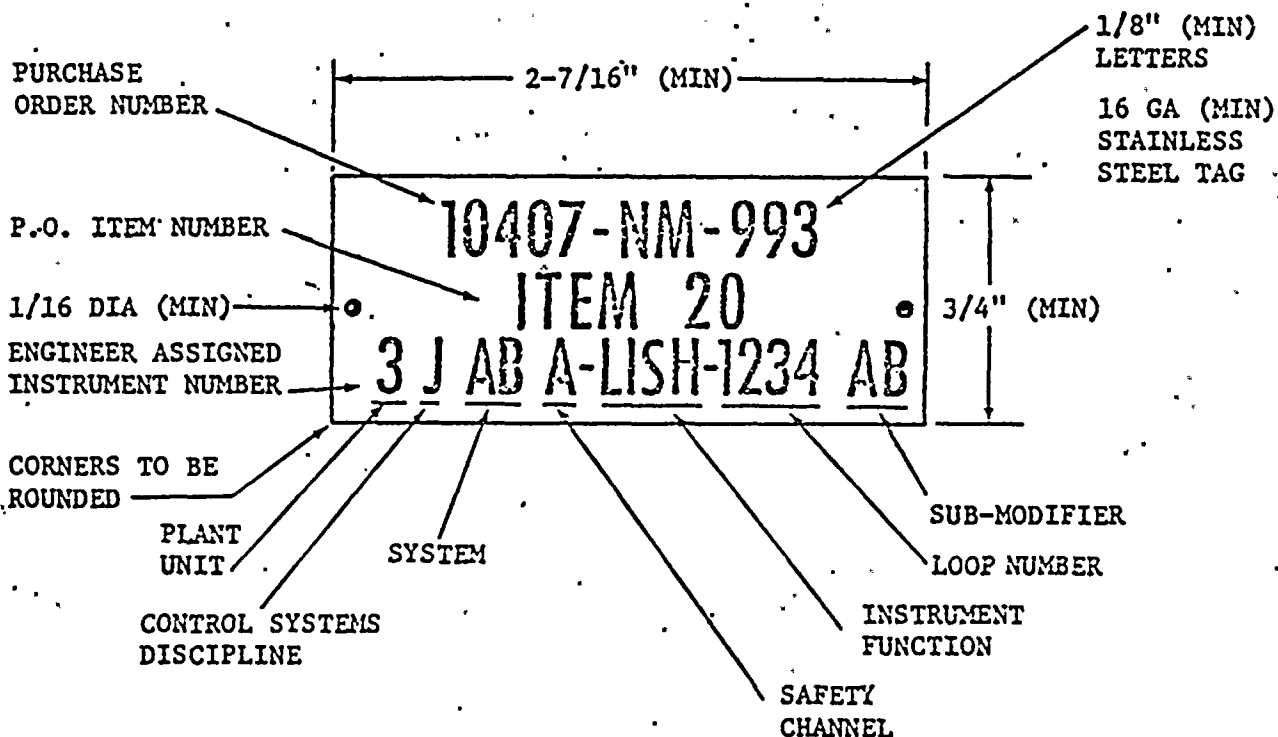
See attached page 1A

SIGNATURE: R. G. Bushman DATE: 10-11-82

INSTRUCTIONS FOR INSTRUMENT TAGGING

Attachment To
2426-PFR-079
Rev. C, pg 2

1. Each instrument, control valve, and device designated in accordance with ISA-S5.1-1973, Instrumentation Symbols and Identification, shall be tagged with a stainless steel tag as shown below. The tag shall be attached to the instrument with stainless steel rivets, screws or wire.
2. Rivets or screws are the preferred means of attachment. Stainless steel wire is the least desired alternate.
3. Wiring of identification tags to components is to be provided when component pressure boundary integrity or device surface contour and size precludes mounting with rivets or screws. Wiring is to be 20 AWG solid stainless steel wire secured at both tag ends.
4. Tagging information shall include the purchase order number, P.O. item number, and instrument number embossed, engraved or impression stamped on the tag as shown on the example below.



No.		DATE		REVISIONS		BY		CHK		OFFICN SUPV.		GROUP		PROJ	
6-27-75		Issued for Fabrication				JHD		WTS		A-Z		MHC		10407	
SCALE				DESIGNED				DRAWN				OFFICE CHIEF			
ORIGIN CS LAPD ANPP				ARIZONA PUBLIC SERVICE COMPANY PALO VERDE NUCLEAR GENERATING STATION				JOB NO. 10407				DRAWING NO.			
												13-J-ZZS-001			
												SHEET 1 OF 1			
												REV. 0			

ED-22(4-74)

B. REVIEW BY GA TASK LEADER

PFR NO. 2426-PFR

- 079

REVISION

C

☐ REQUEST RE-REVIEW

BY: _____ DATE: _____

REASONS:

☒ AGREE PF IS ~~VALID~~/INVALIDBY: Boyle DATE: 10/11/82☐ DISAGREE WITH INITIATOR

BY: _____ DATE: _____

REASONS:

See Rev. B, Part B.

Additional information and format changes requested by Findings Review Committee are the reasons for Rev. C.

C., D. SEE ATTACHED SECTIONS C AND D (PAGE 3)

E. RECOMMENDATION BY FINDINGS REVIEW COMMITTEE

ADDITIONAL INFORMATION REQUIRED

DEFINITION:

☒ ADEQUATE☐ INADEQUATE

VALIDITY:

☐ VALID☒ INVALID

CLASSIFICATION:

☐ OBSERVATION ☐ FINDING

JUSTIFICATION

CLASSIFICATION CRITERION NO. RESULTING IN "FINDING" _____

COMMENT ON "OBSERVATION" OR "FINDING" CLASSIFICATION:

BY: L. L. Koutz DATE: 10/12/82 BY: _____ DATE: _____

F. GA PROJECT MANAGER

☒ ACCEPT☐ REJECTBY: MA Simon DATE: 10-13-82

pg. 4

POTENTIAL FINDING REPORT
PVNGS QUALITY ASSURANCE VERIFICATION

PFR NO. 2426-PFR -079 REVISION B

A. PREPARATION BY GA INITIATOR

AFFECTED ITEMS:

Unit 2 instruments, as follows:

1. Temperature elements: 02JAFNTE080 and 02JAFETE082

2. Valve Position Transmitters: 02JAFBZT0031, 02JSIBZT0658, and 02JSIBZT0615

REQUIREMENT REFERENCE DOCUMENTS:

Instrument index 13-J-ZZI-001, Rev. 13

P&I Diagram 13-M-AFP-001, Rev. 10

BASIC REQUIREMENT:

Instruments shall be properly identified with permanent tags.

DESCRIPTION OF POTENTIAL FINDING:

Instrument identification tags are missing on the above instruments in Unit 2.

[NOTE: Rev. B clarifies page 1 of the PFR and deletes reference to valves HV-031, HV-658, and HV-679, which have been included in other PFRs already].

PREPARED BY: R. Benham, R. Darwin, W. Long DATE: 9-24-82

USE THE SPACE BELOW TO DOCUMENT ANY RE-REVIEW ACTION TAKEN BY INITIATOR ON THIS PFR.

Further discussion with the on-site organizations indicates that the plant ID tags be installed prior to installation, but not always. The usual procedure is to call for permanent installation of such ID tags after installation and verification is complete if they are found to be missing at that time. Since the Unit 2 equipment is currently being installed, such missing tags as indicated above would not constitute a potential finding in this case. I agree that the PFR may be considered invalid.

SIGNATURE: R. Benham RCB/REP W. Long DATE: 9-24-82

B. REVIEW BY GA TASK LEADER

PFR NO. 2426-PFR

- 079

pg. 5

REVISION B

☐ REQUEST RE-REVIEW

BY: _____

DATE: _____

REASONS:

☒ AGREE PF IS ~~VALID~~/INVALIDBY: BoyleDATE: 9/24/82☐ DISAGREE WITH INITIATOR

BY: _____

DATE: _____

REASONS:

Initiator's re-review comments substantiate my original recommendation to invalidate this PFR.

C., D. SEE ATTACHED SECTIONS C AND D (PAGE 3)

E. RECOMMENDATION BY FINDINGS REVIEW COMMITTEE

DEFINITION:

☐ ADEQUATE☒ INADEQUATE

VALIDITY:

☐ VALID☐ INVALID

CLASSIFICATION:

☐ OBSERVATION ☐ FINDING

JUSTIFICATION

CLASSIFICATION CRITERION NO. RESULTING IN "FINDING" _____

COMMENT ON "OBSERVATION" OR "FINDING" CLASSIFICATION:

ADDITIONAL INFORMATION REQUIRED

Please revise PFR to make Basic Requirement and Requirement Reference Document consistent. Please supply copy of procedure which covers the initial tagging and the replacement of lost tags

BY: _____

DATE: _____

BY: S. D. KoutyDATE: 9/28/82

F. GA PROJECT MANAGER

☐ ACCEPT☐ REJECT

BY: _____

DATE: _____

POTENTIAL FINDING REPORT
PVNGS QUALITY ASSURANCE VERIFICATION

pg. 6

PFR NO. 2426-PFR -079 REVISION Issue A

A. PREPARATION BY GA INITIATOR

AFFECTED ITEMS:

02 ~~01~~JAFNTE-0080 02JSIBZT-0615 02JSIBHV-0679
02JAFNTE-0082 02JSIBZT-0658
02JAFBHV-0031 02JSIBZT-0679
02JAFBZT-0031 02JSIBHV-0658

REQUIREMENT REFERENCE DOCUMENTS:

Instrument index 13-J-ZZI-001

BASIC REQUIREMENT:

Items should have appropriate identification

DESCRIPTION OF POTENTIAL FINDING:

Plant identification tag missing

PREPARED BY: R. Benham/R. Darwin/W. Long

DATE: 9/17/82

USE THE SPACE BELOW TO DOCUMENT ANY RE-REVIEW ACTION TAKEN BY INITIATOR ON THIS PFR.

SEE COVER SHEET, REV. B.

SIGNATURE: RGB/DDP w/Long

DATE: 9-24-82

B. REVIEW BY GA TASK LEADER

PFR NO. 2426-PFR - 079

REVISION

A

☒ REQUEST RE-REVIEW

BY:

DATE:

REASONS: The affected items (missing plant ID tags) are all in Unit 2 which is still under construction. The missing tags on these items can be attributed to the incomplete status of construction. I recommend that this PFR be invalidated on this basis.

☒ AGREE PFR IS ~~VALID~~/INVALID

BY:

DATE:

☐ DISAGREE WITH INITIATOR

BY:

DATE:

REASONS:

See Rev. B.

C., D. SEE ATTACHED SECTIONS C AND D (PAGE 3)

E. RECOMMENDATION BY FINDINGS REVIEW COMMITTEE

ADDITIONAL INFORMATION REQUIRED

DEFINITION: ☐ ADEQUATE ☐ INADEQUATEVALIDITY: ☐ VALID ☐ INVALIDCLASSIFICATION: ☐ OBSERVATION ☐ FINDING

JUSTIFICATION

CLASSIFICATION CRITERION NO. RESULTING IN "FINDING" _____

COMMENT ON "OBSERVATION" OR "FINDING" CLASSIFICATION:

BY: _____ DATE: _____

BY: _____ DATE: _____

F. GA PROJECT MANAGER

☐ ACCEPT☐ REJECT

BY: _____ DATE: _____

02JAFNE 0075

AF TURB OIL FEED TO GOV BRG

NA NA

M-021

NA ZMFO01R20

NA NA

NA NA

NA NA

NA NA

NA NA

NA NA

NA NA

03JAFN 0075

AF TURB OIL FEED TO GOV BRG

NA NA

M-021

NA ZMFO01R20

NA NA

NA NA

NA NA

NA NA

NA NA

NA NA

NA NA

01JAFNT1 0076

AF TURB OIL FROM GOV BRG

NA NA

M-021

NA ZMFO01R20

NA NA

NA NA

NA NA

NA NA

NA NA

NA NA

NA NA

SYSTEM / SEQUENCE

ANPP INSTRUMENT INDEX

Page 19
Dwg. No. 13-J-ZZI-001
REV 13

INSTRUMENT NUMBER	SERVICE DESCRIPTION	LOGIC DIAG	LOOP DWG	PURCHASE ORDER NO	DATA SHEET	INST. LOCA- TION	DESIGN CLASS	INSTALL DETAIL	VENDOR INSTRUMENT NUMBER	PLCT. SCHEM. DIAG.		R E V
02JAFNTI 0076	AF TURB OIL FROM GOV BRG	NA	NA	M-021	NA	ZMFO01R20	NA	NA	NA	NA	NA	J 10
03JAFNTI 0076	AF TURB OIL FROM GOV BRG	NA	NA	M-021	NA	ZMFO01R20	NA	NA	NA	NA	NA	J 10
01JAFNTW 0076	AF TURB OIL FROM GOV BRG	NA	NA	M-021	NA	ZMFO01R20	NA	NA	NA	NA	NA	J 10
02JAFNTW 0076	AF TURB OIL FROM GOV BRG	NA	NA	M-021	NA	ZMFO01R20	NA	NA	NA	NA	NA	J 10
03JAFNTW 0076	AF TURB OIL FROM GOV BRG	NA	NA	M-021	NA	ZMFO01R20	NA	NA	NA	NA	NA	J 10
01JAFNFO 0077	AF TURB OIL FEED TO COUP BRG	NA	NA	M-021	NA	ZMFO01R20	NA	NA	NA	NA	NA	J 10
02JAFNFO 0077	AF TURB OIL FEED TO COUP BRG	NA	NA	M-021	NA	ZMFO01R20	NA	NA	NA	NA	NA	J 10
03JAFNFO 0077	AF TURB OIL FEED TO COUP BRG	NA	NA	M-021	NA	ZMFO01R20	NA	NA	NA	NA	NA	J 10
01JAFNTI 0078	AF TURB OIL FROM COUP BRG	NA	NA	M-021	NA	ZMFO01R20	NA	NA	NA	NA	NA	J 10
02JAFNTI 0078	AF TURB OIL FROM COUP BRG	NA	NA	M-021	NA	ZMFO01R20	NA	NA	NA	NA	NA	J 10
03JAFNTI 0078	AF TURB OIL FROM COUP BRG	NA	NA	M-021	NA	ZMFO01R20	NA	NA	NA	NA	NA	J 10
01JAFNTW 0078	AF TURB OIL FROM COUP BRG	NA	NA	M-021	NA	ZMFO01R20	NA	NA	NA	NA	NA	J 10
02JAFNTW 0078	AF TURB OIL FROM COUP BRG	NA	NA	M-021	NA	ZMFO01R20	NA	NA	NA	NA	NA	J 10
03JAFNTW 0078	AF TURB OIL FROM COUP BRG	NA	NA	M-021	NA	ZMFO01R20	NA	NA	NA	NA	NA	J 10
01JAFNTE 0079	AF PP N MOTOR BRG	NA	NA	M-021	NA	ZTFO01R20	Y	NA	NA	NA	NA	J 10
02JAFNTE 0079	AF PP N MOTOR BRG	NA	NA	M-021	NA	ZTFO01R20	Y	NA	NA	NA	NA	J 10
03JAFNTE 0079	AF PP N MOTOR BRG	NA	NA	M-021	NA	ZTFO01R20	Y	NA	NA	NA	NA	J 10
01JAFNTE 0080	AF PP B MOTOR BRG	NA	NA	M-021	NA	ZMFO01R20	Y	NA	NA	NA	NA	J 10
02JAFNTE 0080	AF PP B MOTOR BRG	NA	NA	M-021	NA	ZMFO01R20	Y	NA	NA	NA	NA	J 10
03JAFNTE 0080	AF PP B MOTOR BRG	NA	NA	M-021	NA	ZMFO01R20	Y	NA	NA	NA	NA	J 10
01JAFNTE 0081	AF PP N MOTOR BRG FREE END	NA	NA	M-021	NA	ZTFO01S#0	Y	NA	NA	NA	NA	J 10
02JAFNTE 0081	AF PP N MOTOR BRG FREE END	NA	NA	M-021	NA	ZTFO01S#0	Y	NA	NA	NA	NA	J 10
03JAFNTE 0081	AF PP N MOTOR BRG FREE END	NA	NA	M-021	NA	ZTFO01S#0	Y	NA	NA	NA	NA	J 10
01JAFNTE 0082	AF PP B MOTOR BRG FREE END	NA	NA	M-021	NA	ZMFO01S#0	Y	NA	NA	NA	NA	J 10

TORREY PINES TECHNOLOGY
ARIZONA PUBLIC SERVICE—PVNGS

PACKAGE NO. 2-E-1, PAGE OF
SYSTEM Aux. Feedwater
TAG NUMBERS 2JAFNTE80
REPRODUCED FROM INST. INDEX
DCN'S N/A
FCR'S N/A

Attached to
2426-PSE-079
pg. 8

REPORT DATE: 7/29/82

ANPP
INSTRUMENT INDEX:PAGE: 20
DWG NO: 13-J-221-001
REV: 13

SYSTEM / SEQUENCE

Attachment to
2426 - PFR-079

No TAG

INSTRUMENT NUMBER	SERVICE DESCRIPTION	LOGIC DIAG	LOOP DWG	PURCHASE PRICE NO	DATA SHEET	INST. LOCA- TION	DESIGN CLASS	INSTALL DETAIL	VENDOR INSTRUMENT NUMBER	ELECT. SCHEM. DIAG.	R I M V	R F V
02JAFNTE 0082	AF PP B MOTOR BRG FREE END	NA	NA	M-021	NA	ZMFOO1S#0	Y	NA	NA	AFBOO1EL	J	10
03JAFNTE 0082	AF PP B MOTOR BRG FREE END	NA	NA	M-021	NA	ZMFOO1S#0	Y	NA	NA	AFBOO1EL	J	10
01JAFNTE 0083	AF PP A BRG FREE END	NA	NA	M-021	NA	ZMFOO1S#0	Y	NA	NA	NA EL NA	J	10
02JAFNTE 0083	AF PP A BRG FREE END	NA	NA	M-021	NA	ZMFOO1S#0	Y	NA	NA	NA EL	J	10
03JAFNTE 0083	AF PP A BRG FREE END	NA	NA	M-021	NA	ZMFOO1S#0	Y	NA	NA	NA EL	J	10
01JAFNTE 0084	AF PP A BRG CPLG END	NA	NA	M-021	NA	ZMFOO1S#0	Y	NA	NA	NA EL NA		
02JAFNTE 0084	AF PP A BRG CPLG END	NA	NA	M-021	NA	ZMFOO1S#0	Y	NA	NA	NA EL		
03JAFNTE 0084	AF PP A BRG CPLG END	NA	NA	M-021	NA	ZMFOO1S#0	Y	NA	NA		J	10
01JAFNTE 0085	AF PP A THRUST BRG	NA	NA	M-021	NA	ZMFOO1S#0	Y	NA	NA		J	10
02JAFNTE 0085	AF PP A THRUST BRG	NA	NA	M-021	NA	ZMFOO1S#0	Y	NA	NA			10
03JAFNTE 0085	AF PP A THRUST BRG	NA	NA	M-021	NA	ZMFOO1S#0	Y	NA	NA			10
01JAFNTE 0086	AF PP B BRG FREE END	NA	NA	M-021	NA	ZMFOO1S#0	Y	NA	NA			10
02JAFNTE 0086	AF PP B BRG FREE END	NA	NA	M-021	NA	ZMFOO1S#0	Y	NA	NA			10
03JAFNTE 0086	AF PP B BRG FREE END	NA	NA	M-021	NA	ZMFOO1S#0	Y	NA	NA			10
01JAFNTE 0087	AF PP B BRG CPLG END	NA	NA	M-021	NA	ZMFOO1S#0	Y	NA	NA			10
02JAFNTE 0087	AF PP B BRG CPLG END	NA	NA	M-021	NA	ZMFOO1S#0	Y	NA	NA			10
03JAFNTE 0087	AF PP B BRG CPLG END	NA	NA	M-021	NA	ZMFOO1S#0	Y	NA	NA			10
01JAFNTE 0088	AF PP B THRUST BRG	NA	NA	M-021	NA	ZMFOO1S#0	Y	NA	NA	AFBOO1EL NA	J	10
02JAFNTE 0088	AF PP B THRUST BRG	NA	NA	M-021	NA	ZMFOO1S#0	Y	NA	NA	AFBOO1EL	J	10
03JAFNTE 0088	AF PP B THRUST BRG	NA	NA	M-021	NA	ZMFOO1S#0	Y	NA	NA	AFBOO1EL	J	10
01JAFNTE 0089	AF PP N BRG FREE END	NA	NA	M-021	NA	ZTFOO1S#0	Y	NA	NA	AFBOO2EL NA	J	10
02JAFNTE 0089	AF PP N BRG FREE END	NA	NA	M-021	NA	ZTFOO1S#0	Y	NA	NA	AFBOO2EL	J	10
03JAFNTE 0089	AF PP N BRG FREE END	NA	NA	M-021	NA	ZTFOO1S#0	Y	NA	NA	AFBOO2EL	J	10
01JAFNTE 0090	AF PP N BRG CPLG END	NA	NA	M-021	NA	ZTFOO1S#0	Y	NA	NA	AFBOO2EL NA	J	10

TORREY PINES TECHNOLOGY
ARIZONA PUBLIC SERVICE—PVNGSPACKAGE NO. 2-E-1, PAGE OF
SYSTEM Aux Feed Water
TAG NUMBERS 2JAFNTE 82
REPRODUCED FROM Inst. Index
DCN'S N/A
FCR'S N/A

SYSTEM / SEQUENCE

3M 0762 4/81

PFR-079
pg. 9

Attachment To
2426-PFR-079

TORREY PINES TECHNOLOGY
ARIZONA PUBLIC SERVICE—PVNGS:

INSTRUMENT NUMBER	SERVICE DESCRIPTION	LOGIC DIAG	LOOP DWC	PURCHASE ORDER NO.	DATA SHEET	INST. LOCA- TION	DESIGN CLASS
O1JAFBHS 003OD	AF REG VLV PP B TO SG 1-RS OR	L002NA	N-001	NA	ZJC038Q1E		
O2JAFBHS 003OD	AF REG VLV PP B TO SG 1-RS OR	L002NA	N-001	NA	ZJC038Q1E		
O3JAFBHS 003OD	AF REG VLV PP B TO SG 1-RS OR	L002NA	N-001	NA	ZJC038Q1E		
O1JAFBHS 003OE	AF REG VLV PP B TO SG 1 DISC	L002NA	N-001	NA	Q1E		
O2JAFBHS 003OE	AF REG VLV PP B TO SG 1 DISC	L002NA	N-001	NA	Q1E		
O3JAFBHS 003OE	AF REG VLV PP B TO SG 1 DISC	L002NA	N-001	NA	Q1E		
O1JAFBVH 003I	AF REG VLV PP B TO SG 2	L002NA	J-601A081060AFF133Q1C	NA	NA	AFB003EM	NA QF1 P IO
O2JAFBVH 003I	AF REG VLV PP B TO SG 2	L002NA	J-601A081060AFF133Q1C	NA	NA	AFB003EM	QF1 P IO
O3JAFBVH 003I	AF REG VLV PP B TO SG 2	L002NA	J-601A081060AFF133Q1C	NA	NA	AFB003EM	QF1 P IO
O1JAFBZT 003I	AF REG VLV PP B TO SG 2	NA E054	J-601A081060AFF131Q1E	NA	NA	NA EL NA	QF1 P IO
O2JAFBZT 003I	AF REG VLV PP B TO SG 2	NA E054	J-601A081060AFF131Q1E	NA	NA	NA EL	QF1 P IO
O3JAFBZT 003I	AF REG VLV PP B TO SG 2	NA E054	J-601A081060AFF131Q1E	NA	NA	NA EL	
O1JAFBHS 003IA	AF REG VLV PP B TO SG 2-CR	L002NA	J-200	NA	ZJF009Q1E	NA RMBO6	
O2JAFBHS 003IA	AF REG VLV PP B TO SG 2-CR	L002NA	J-200	NA	ZJF009Q1E	NA RMBO6	QF1 J IO
O3JAFBHS 003IA	AF REG VLV PP B TO SG 2-CR	L002NA	J-200	NA	ZJF009Q1E	NA RMBO6	QF1 J IO
O1JAFBZI 003IA	AF REG VLV PP B TO SG 2-CR	NA E054	J-200	NA	ZJF009Q1E	NA RMBO6	QF1 J IO
O2JAFBZI 003IA	AF REG VLV PP B TO SG 2-CR	NA E054	J-200	NA	ZJF009Q1E	NA RMBO6	QF1 J IO
O3JAFBZI 003IA	AF REG VLV PP B TO SG 2-CR	NA E054	J-200	NA	ZJF009Q1E	NA RMBO6	QF1 J IO
O1JAFBHS 003IB	AF REG VLV PP B TO SG 2-RS	L002NA	N-001	NA	ZJC038Q1E	NA ZJBEO1	QF1 E IO
O2JAFBHS 003IB	AF REG VLV PP B TO SG 2-RS	L002NA	N-001	NA	ZJC038Q1E	NA ZJBEO1	QF1 E IO
O3JAFBHS 003IB	AF REG VLV PP B TO SG 2-RS	L002NA	N-001	NA	ZJC038Q1E	NA ZJBEO1	QF1 E IO
O1JAFBZI 003IB	AF REG VLV PP B TO SG 2-RS	NA E054	N-001	NA	ZJC038Q1E	NA ZJBEO1	QF1 E IO
O2JAFBZI 003IB	AF REG VLV PP B TO SG 2-RS	NA E054	N-001	NA	ZJC038Q1E	NA ZJBEO1	QF1 E IO
O3JAFBZI 003IB	AF REG VLV PP B TO SG 2-RS	NA E054	N-001	NA	ZJC038Q1E	NA ZJBEO1	QF1 E IO

PACKAGE NO. 2-E-1, PAGE _____ OF _____
 SYSTEM Aux Feedwater
 TAG NUMBERS 2JAEBZT31
 REPRODUCED FROM Inst. Index
 DCN'S None
 FCR'S None

SYSTEM / SEQUENCE

REV: 12

ORM 0762 4181

PF2-079
pg. 10

Attachment To
2426-PFR-079

INSTRUMENT NUMBER	SERVICE DESCRIPTION	LOGIC DIAG	UNIT DWG	PURCHASE ORDER NO	DATA SHEET	INST. LOCA- TION	DESIGN CLASS	INSTALL DETAIL	VENUE INSTRUMENT NUMBER	ELECT. SYM. DIAG.						
02JSIBZT 0614	SI TK 1 ISOL	NA	VP	N-001	VP	SIF13601E	NA	NA	ZT614	NA	EL	NA	QF1		7	
03JSIBZT 0614	SI TK 1 ISOL	NA	VP	N-001	VP	SIF13601E	NA	NA	ZT614	NA	EL	NA	QF1		7	
01JSIBHS 0615	LPSI FLOW CONTROL TO RC 2A	NA	NA	J-200	NA	ZJF00901E	NA	NA		SIB007EL		RMBB02	QF1		6	
02JSIBHS 0615	LPSI FLOW CONTROL TO RC 2A	NA	NA	J-200	NA	ZJF00901E	NA	NA		SIB007EL		RMBB02	QF1		6	
03JSIBHS 0615	LPSI FLOW CONTROL TO RC 2A	NA	NA	J-200	NA	ZJF00901E	NA	NA		SIB007EL		RMBB02	QF1		6	
01JSIBUV 0615	LPSI FLOW CONTROL TO RC 2A	NA	NA	N-001	VP	SIF20801B	NA	NA	<	SIB007EM		NA	N	QF1		6
02JSIBUV 0615	LPSI FLOW CONTROL TO RC 2A	NA	NA	N-001	VP	SIF20801B	NA	NA	<	SIB007EM		NA	N	QF1		6
03JSIBUV 0615	LPSI FLOW CONTROL TO RC 2A	NA	NA	N-001	VP	SIF20801B	NA	NA	<	SIB007EM		NA	N	QF1		6
01JSIBZI 0615	LPSI FLOW CONTROL TO RC 2A	NA	VP	J-200	NA	ZJF00901E	NA	NA	ZI615	SIB007EL		RMBB02	QF1		11	
02JSIBZI 0615	LPSI FLOW CONTROL TO RC 2A	NA	VP	J-200	NA	ZJF00901E	NA	NA	ZI615	SIB007EL		RMBB02	QF1		11	
03JSIBZI 0615	LPSI FLOW CONTROL TO RC 2A	NA	VP	J-200	NA	ZJF00901E	NA	NA	ZI615	SIB007EL		RMBB02	QF1		11	
01JSIBZT 0615	LPSI FLOW CONTROL TO RC 2A	NA	VP	N-001	VP	SIF20801E	NA	NA	ZTG15	SIB007EL		NA	QF1		7	
02JSIBZT 0615	LPSI FLOW CONTROL TO RC 2A	NA	VP	N-001	VP	SIF20801E	NA	NA	ZTG15	SIB007EL		NA	QF1		7	
03JSIBZT 0615	LPSI FLOW CONTROL TO RC 2A	NA	VP	N-001	VP	SIF20801E	NA	NA	ZTG15	SIB007EL		NA	QF1		7	
01JSIBHS 0616	HPSI 2 FLOW CONTROL TO RC 2A	NA	NA	J-200	NA	ZJF00901E	NA	NA	NA	SIB011EL		RMBB02	QF1		11	
02JSIBHS 0616	HPSI 2 FLOW CONTROL TO RC 2A	NA	NA	J-200	NA	ZJF00901E	NA	NA	NA	SIB011EL		RMBB02	QF1		11	
03JSIBHS 0616	HPSI 2 FLOW CONTROL TO RC 2A	NA	NA	J-200	NA	ZJF00901E	NA	NA	NA	SIB011EL		RMBB02	QF1		11	
01JSIBUV 0616	HPSI 2 FLOW CONTROL TO RC 2A	NA	NA	N-001	VP	SIF20401	NA	NA								
02JSIBUV 0616	HPSI 2 FLOW CONTROL TO RC 2A	NA	NA	N-001	VP	SIF20401	NA	NA								
03JSIBUV 0616	HPSI 2 FLOW CONTROL TO RC 2A	NA	NA	N-001	VP	SIF20401	NA	NA								
01JSIBZI 0616	HPSI 2 FLOW CONTROL TO RC 2A	NA	NA	J-200	NA	ZJF00901	NA	NA								
02JSIBZI 0616	HPSI 2 FLOW CONTROL TO RC 2A	NA	NA	J-200	NA	ZJF00901	NA	NA								
03JSIBZI 0616	HPSI 2 FLOW CONTROL TO RC 2A	NA	NA	J-200	NA	ZJF00901	NA	NA								
01JSIBZT 0616	HPSI 2 FLOW CONTROL TO RC 2A	NA	NA	N-001	VP	SIF20401E	NA	NA								

PACKAGE NO. 2-E-2, PAGE OF
 SYSTEM Safety Injection System
 TAG NUMBERS 02JSIBZT 0615
 REPRODUCED FROM Instrument Index
 DCN'S N.A.
 FCR'S N.A.

PFR-079
Pg. 11

REPORT DATE: 7/29/82

ANPP---
INSTRUMENT INDEX:PAG. 759
DWG NO: 13-J-221-001
REV: 13

SYSTEM / SEQUENCE

Attachment to
2426 - PFR - 079

INSTRUMENT NUMBER	SERVICE DESCRIPTION	LOGIC DIAG	LOOP DWG	PURCHASE ORDER NO	DATA SHEET	INST. LOCA- TION	DESIGN CLASS	INSTALL DETAIL	VENDOR INSTRUMENT NUMBER	ELECT. SCHEM. DIAG.						
02JSIAHV 0657	S/D CLG TEMP CONTROL TRAIN A	NA	NA	N-001	VP	SIF20701B	NA	NA	<	SIB027EM	NA	N	QF1			
03JSIAHV 0657	S/D CLG TEMP CONTROL TRAIN A	NA	NA	N-001	VP	SIF20701B	NA	NA	<	SIB027EM	NA	N	QF1			
01JSIAZI 0657	S/D CLG TEMP CONTROL TRAIN A	NA	VP	J-200	NA	ZJF00901E	NA	NA	ZI657	NA	EL	RMAR02				
02JSIAZI 0657	S/D CLG TEMP CONTROL TRAIN A	NA	VP	J-200	NA	ZJF00901E										
03JSIAZI 0657	S/D CLG TEMP CONTROL TRAIN A	NA	VP	J-200	NA	ZJF00901E										
01JSIAZT 0657	S/D CLG TEMP CONTROL TRAIN A	NA	VP	N-001	VP	SIF20701E										
02JSIAZT 0657	S/D CLG TEMP CONTROL TRAIN A	NA	VP	N-001	VP	SIF20701E										
03JSIAZT 0657	S/D CLG TEMP CONTROL TRAIN A	NA	VP	N-001	VP	SIF20701E										
01JSIBHS 0658	S/D CLG TEMP CONTROL TRAIN B	NA	NA	J-200	NA	ZJF00901E										
02JSIBHS 0658	S/D CLG TEMP CONTROL TRAIN B	NA	NA	J-200	NA	ZJF00901E										
03JSIBHS 0658	S/D CLG TEMP CONTROL TRAIN B	NA	NA	J-200	NA	ZJF00901E										
01JSIBHV 0658	S/D CLG TEMP CONTROL TRAIN B	NA	NA	N-001	VP	SIF20801B	NA	NA	<	SIB027EM	NA	N	QF1			
02JSIBHV 0658	S/D CLG TEMP CONTROL TRAIN B	NA	NA	N-001	VP	SIF20801B	NA	NA	<	SIB027EM	NA	N	QF1			
03JSIBHV 0658	S/D CLG TEMP CONTROL TRAIN B	NA	NA	N-001	VP	SIF20801B	NA	NA	<	SIB027EM	NA	N	QF1			
01JSIBZI 0658	S/D CLG TEMP CONTROL TRAIN B	NA	VP	J-200	NA	ZJF00901E	NA	NA	ZI658	NA	EL	RMBB02	QF1			
02JSIBZI 0658	S/D CLG TEMP CONTROL TRAIN B	NA	VP	J-200	NA	ZJF00901E	NA	NA	ZI658	NA	EL	RMBB02	QF1			
03JSIBZI 0658	S/D CLG TEMP CONTROL TRAIN B	NA	VP	J-200	NA	ZJF00901E	NA	NA	ZI658	NA	EL	RMBB02	QF1			
01JSIBZI 0658	S/D CLG TEMP CONTROL TRAIN B	NA	VP	N-001	VP	SIF20801E	NA	NA	ZI658	NA	EL	NA	QF1			
02JSIBZT 0658	S/D CLG TEMP CONTROL TRAIN B	NA	VP	N-001	VP	SIF20801E	NA	NA	ZI658	NA	EL	NA	QF1			
03JSIBZT 0658	S/D CLG TEMP CONTROL TRAIN B	NA	VP	N-001	VP	SIF20801E	NA	NA	ZI658	NA	EL	NA	QF1			
01JSIBHS 0659	TRAIN B RECIRC TO RWT	NA	NA	J-200	NA	ZJF00901E	NA	NA		SIB016EL	RMBB02		QF1			
02JSIBHS 0659	TRAIN B RECIRC TO RWT	NA	NA	J-200	NA	ZJF00901E	NA	NA		SIB016EL	RMBB02		QF1			
03JSIBHS 0659	TRAIN B RECIRC TO RWT	NA	NA	J-200	NA	ZJF00901E	NA	NA		SIB016EL	RMBB02		QF1			
01JSIBUV 0659	TRAIN B RECIRC TO RWT	NA	NA	N-001	VP	SIF20401B	NA	NA	<	SIB016ES	NA	N	QF1			

PACKAGE NO. 2-E-2, PAGE OF
SYSTEM Safety Injection System
TAG NUMBERS 02JSIBZT 0658
REPRODUCED FROM Instrument Index
DCN'S N.A.
FCR'S N.A.

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pg. 12

REPORT DATE: 7/29/82

ANPP
INSTRUMENT INDEX:

DWG NO:

PAGE: 1705
13-J-221-001
REV: 13

SYSTEM / SEQUENCE

Attachment to
2426-PFR-079

INSTRUMENT NUMBER	SERVICE DESCRIPTION	LOGIC DIAG	LOOP DWC	PURCHASE ORDER NO	DATA SHEET	INST. LOCA- TION	INSTR CLASS	LOC	INSTALL DETAIL	VENDOR INSTRUMENT NUMBER	ELECT. SCHEM. DIAG.	NA	QF1	7
02JSIAZT 0678	S/D CLG HE ISOL TRAIN A	NA	VP	N-001	VP	SIF20701E	NA	NA	2T678	SIB033EL	NA	QF1	7	
03JSIAZT 0678	S/D CLG HE ISOL TRAIN A	NA	VP	N-001	VP	SIF20701E	NA	NA	2T678	SIB033EL	NA	(
01JSIBHS 0679	S/D CLG HE ISOL TRAIN B	NA	NA	J-200	NA	ZJF00901E	NA	NA		SIB033EL	RMUB02	(
02JSIBHS 0679	S/D CLG HE ISOL TRAIN B	NA	NA	J-200	NA	ZJF00901E	NA	NA		SIB033EL	RMUB02	QF1	6	
03JSIBHS 0679	S/D CLG HE ISOL TRAIN B	NA	NA	J-200	NA	ZJF00901E	NA	NA		SIB033EL	RMUB02	QF1	6	
01JSIBHV 0679	S/D CLG HE ISOL TRAIN B	NA	NA	N-001	VP	SIF20801B	NA	NA	<	SIB033EM	NA	N	QF1	6
02JSIBHV 0679	S/D CLG HE ISOL TRAIN B	NA	NA	N-001	VP	SIF20801B	NA	NA	<	SIB033EM	NA	N	QF1	6
03JSIBHV 0679	S/D CLG HE ISOL TRAIN B	NA	NA	N-001	VP	SIF20801B	NA	NA	<	SIB033EM	NA	N	QF1	6
01JSIBZI 0679	S/D CLG HE ISOL TRAIN B	NA	VP	J-200	NA	ZJF00901E	NA	NA	2T679	SIB033EL	RMUB07	QF1	11	
02JSIBZI 0679	S/D CLG HE ISOL TRAIN B	NA	VP	J-200	NA	ZJF00901E	NA	NA	2T679	SIB033EL	RMUB07	QF1	11	
03JSIBZI 0679	S/D CLG HE ISOL TRAIN B	NA	VP	J-200	NA	ZJF00901E	NA	NA	2T679	SIB033EL	RMUB07	QF1	11	
NO TAG 01JSIBZI 0679	S/D CLG HE ISOL TRAIN B	NA	VP	N-001	VP	SIF20801E	NA	NA	2T679	SIB033EL	NA	QF1	7	
02JSIBZI 0679	S/D CLG HE ISOL TRAIN B	NA	VP	N-001	VP	SIF20801E	NA	NA	2T679	SIB033EL	NA	QF1	7	
03JSIBZI 0679	S/D CLG HE ISOL TRAIN B	NA	VP	N-001	VP	SIF20801E	NA	NA	2T679	SIB033EL	NA	QF1	7	
01JSIBHS 0680	SPRAY CHEM PP B DSCH TO CS PP	NA	NA	J-200	NA	ZJF00901E	NA	NA		SIB037EL	RMUB02	QF1	6	
02JSIBHS 0680	SPRAY CHEM PP B DSCH TO CS PP	NA	NA	J-200	NA	ZJF00901E	NA	NA						
03JSIBHS 0680	SPRAY CHEM PP B DSCH TO CS PP	NA	NA	J-200	NA	ZJF00901E	NA	NA						
01JSIBUV 0680	SPRAY CHEM PP B DSCH TO CS PP	NA	NA	N-001	VP	SIF21401B	NA	NA						
02JSIBUV 0680	SPRAY CHEM PP B DSCH TO CS PP	NA	NA	N-001	VP	SIF21401B	NA	NA						
03JSIBUV 0680	SPRAY CHEM PP B DSCH TO CS PP	NA	NA	N-001	VP	SIF21401B	NA	NA						
01JSIAHS 0681	SPRAY CHEM PP A DSCH TO CS PP	NA	NA	J-200	NA	ZJF00901E	NA	NA						
02JSIAHS 0681	SPRAY CHEM PP A DSCH TO CS PP	NA	NA	J-200	NA	ZJF00901E	NA	NA						
03JSIAHS 0681	SPRAY CHEM PP A DSCH TO CS PP	NA	NA	J-200	NA	ZJF00901E	NA	NA						
01JSIAUV 0681	SPRAY CHEM PP A DSCH TO CS PP	NA	NA	N-001	VP	SIF21401B	NA	NA	<	SIB037ES	NA	N	QF1	6

PACKAGE NO. 2-E-2, PAGE OF
SYSTEM Safety Injection System
TAG NUMBERS 02 JSIB ZT 0679
REPRODUCED FROM Instrument Index
DCN'S N.A.
FCR'S N.A.

PACKAGE NO. 2-E-2, PAGE OF
SYSTEM Safety Injection System
TAG NUMBERS 02JSIBZI 0679
REPRODUCED FROM Instrument Index
DCN'S N.A.
FCR'S N.A.

PFR-079
pg. 13

POTENTIAL FINDING REPORT
PVNGS QUALITY ASSURANCE VERIFICATION

PFR NO. 2426-PFR -080 REVISION C

A. PREPARATION BY GA INITIATOR

AFFECTED ITEMS:

1. Unit 1 Containment Spray Pump Motor
2. Unit 2 Containment Spray Pump Motor

REQUIREMENT REFERENCE DOCUMENTS:

1. Equipment Log, Report MIRO32A
2. CE Projec. Spec. 14273-PE-410-RO2
3. Acceptable engineering practice.

BASIC REQUIREMENT:

1. Motors should be identified as the drive source for a specific pump.
Unit 1 = 1MSIBPO3; Unit 2 = 2MSIBPO3
2. Motor nameplate data should agree with info on supplier's data sheet.

DESCRIPTION OF POTENTIAL FINDING:

1. Motors are not ID tagged, in either Unit 1 or 2.
2. Part of nameplate data does not agree with supplier's data sheet i.e. Frame Size and HP

PREPARED BY: R. G. Benham *RGB* DATE: 10-13-82

USE THE SPACE BELOW TO DOCUMENT ANY RE-REVIEW ACTION TAKEN BY INITIATOR ON THIS PFR.

SIGNATURE: *RGB* *RGB*

DATE: 10-13-82 *RGB*

B. REVIEW BY GA TASK LEADER

PFR NO. 2426-PFR -080

REVISION C

☐ REQUEST RE-REVIEW

BY: _____ DATE: _____

REASONS:

☒ AGREE PFR IS VALID/~~INVALID~~BY: Propler DATE: 10/13/82☐ DISAGREE WITH INITIATOR

BY: _____ DATE: _____

REASONS:

Revision C is a clarification of the "Basic Reg't." and the "Description of Potential Finding" — no change in technical content.

C., D. SEE ATTACHED SECTIONS C AND D (PAGE 3)

E. RECOMMENDATION BY FINDINGS REVIEW COMMITTEE

ADDITIONAL INFORMATION REQUIRED

DEFINITION: ☒ ADEQUATE ☐ INADEQUATEVALIDITY: ☒ VALID ☐ INVALIDCLASSIFICATION: ☒ OBSERVATION ☐ FINDING

JUSTIFICATION

CLASSIFICATION CRITERION NO. RESULTING IN "FINDING" _____

COMMENT ON "OBSERVATION" OR "FINDING" CLASSIFICATION:

Since the pump to which the motor is attached does have a tag it is highly unlikely that the missing tag on the motor could create a safety problem. There is an inconsistency between the nameplate and the data sheet but the nameplate is correct & the correct motor is installed.

BY: S. D. Koutz DATE: 10/14/82

BY: _____ DATE: _____

F. GA PROJECT MANAGER

☒ ACCEPT☐ REJECTBY: [Signature] DATE: 10-14-82

FROM: _____ LOCATION: _____ DATE: _____

TO: Attachment To _____ LOCATION: _____ DATE: _____

2426-PFR-080

PFR-080
Pg. 3

TELEPHONE COMMUNICATION RECORD

(PLEASE HAND LETTER LEGIBLY IN BLACK OR RED INK)

CALL INITIATED BY: BENHAM AT GAC ☒ OTHER: _____

CALL RECEIVED BY: IDE OF APS AT GAC ☐ OTHER: _____

OTHER PARTICIPANTS: NONE

DATE: 10-13-82 TIME: 11:00A PROGRAM NAME: PVNG5 PROGRAM NUMBER: 2426

SUBJECT: PFR 080

SUMMARY: I POINTED OUT TO MR. IDE THAT REV. B
OF PFR 080 INCORRECTLY STATED THE PROBLEM
AS FAR AS PART #2 OF THE PFR IS CONCERNED.
THE STATED PROBLEM SHOULD HAVE BEEN THAT
THE DATA ON THE CSP MOTORS DID NOT AGREE
WITH THAT ON THE SUPPLIER'S DATA SHEET
WITH REGARD TO: (1) HP ; (2) MOTOR FRAME SIZE;
AND (3) MOTOR FULL-LOAD AMPS. MR. IDE SAID HE
WOULD LOOK INTO THIS ITEM & TRY TO
LET ME KNOW WHAT APS FOUND THIS
AFTER NOON.

ACTION ITEMS:	Date Required	Person Responsible

DISTRIBUTION: PHILPS, OPLE

File No.: _____

FROM: _____ LOCATION: _____ DATE: _____

TO: Attachment to _____ LOCATION: _____ DATE: _____

2426-PFR-080

PFR-080
PJ.4

TELEPHONE COMMUNICATION RECORD

(PLEASE HAND LETTER LEGIBLY IN BLACK OR RED INK)

CALL INITIATED BY: IOE OF APS AT GAC ☐ OTHER: _____

CALL RECEIVED BY: BENHAM AT GAC ☒ OTHER: _____

OTHER PARTICIPANTS: PENNICK OF APS

DATE: 10-13-82 TIME: 1:50 P PROGRAM NAME: PVNGS PROGRAM NUMBER: 2426

SUBJECT: PFR 080

SUMMARY: APS FOLLOWING OUR PHONE CONVERSATION THIS AM (SEE TEL-CON NOTES) CHECKED AND VERIFIED THE DIFFERENCES BETWEEN THE CONTAINMT. SPRAY Pp. MTR. NAMEPLATE AND THE SUPPLIER'S MOTOR DATA SHEET. Mr. IOE SAID THEY CHECKED BPG LOGS AND THE MOTOR DATA SHEET IS IN THE PROCESS OF BEING CORRECTED. Mr. PENNICK ADDED THAT THE ELECTRICAL SINGLE-LINE DRAWINGS CORRECTLY SHOW THE 200 HP MOTOR AND THE SIZING IS ALL CORRECT IN CABLES, CIRCUIT BREAKERS ETC.

ACTION ITEMS:	Date Required	Person Responsible

DISTRIBUTION: PHELPS, OPLE

File No.: _____

POTENTIAL FINDING REPORT
PVNGS QUALITY ASSURANCE VERIFICATION

PFR NO. 2426-PFR -080 REVISION B

A. PREPARATION BY GA INITIATOR

AFFECTED ITEMS:

1. Unit 1 Containment Spray Pump Motor
2. Unit 2 Containment Spray Pump Motor

REQUIREMENT REFERENCE DOCUMENTS:

1. Equipment Log, Report MRO32A
2. CE Projec. Spec. 14273-PE-410-RO2

BASIC REQUIREMENT:

1. Motors should be identified as the drive source for a specific pump.
Unit 1 = 1MSIBPO3; Unit 2 = 2MSIMPO3 ^{CB}
2. Motor nameplate data should conform to specs/requirements. ^e

DESCRIPTION OF POTENTIAL FINDING:

1. Motors are not ID tagged, in either Unit 1 or 2.
2. Namplate data for motors are incomplete/inconsistent.

[NOTE: Revision B of PFR-080 clarifies the Affected Items being the motors ⁴⁵ ~~of the pumps.~~

PREPARED BY: R. D. Phelps

R. D. Phelps

DATE: 9-23-82

USE THE SPACE BELOW TO DOCUMENT ANY RE-REVIEW ACTION TAKEN BY INITIATOR ON THIS PFR.

SIGNATURE: _____ DATE: _____

B. REVIEW BY GA TASK LEADER

PFR NO. 2426-PFR - 080

REVISION B

☐ REQUEST RE-REVIEW

BY: _____ DATE: _____

REASONS:

☒ AGREE PF IS VALID/~~INVALID~~

BY: F. Soper DATE: 9/23/82

☐ DISAGREE WITH INITIATOR

BY: _____ DATE: _____

REASONS:

C., D. SEE ATTACHED SECTIONS C AND D (PAGE 3)

E. RECOMMENDATION BY FINDINGS REVIEW COMMITTEE

ADDITIONAL INFORMATION REQUIRED

DEFINITION: ☐ ADEQUATE ☐ INADEQUATE

VALIDITY: ☐ VALID ☐ INVALID

CLASSIFICATION: ☐ OBSERVATION ☐ FINDING

JUSTIFICATION

CLASSIFICATION CRITERION NO. RESULTING IN "FINDING" _____

COMMENT ON "OBSERVATION" OR "FINDING" CLASSIFICATION:

BY: _____ DATE: _____

BY: _____ DATE: _____

F. GA PROJECT MANAGER

☐ ACCEPT

☐ REJECT

BY: _____ DATE: _____

C. REVIEW BY ORIGINAL DESIGN ORGANIZATION

PFR NO. 080, pg. 7REVISION B☐ AGREE ☒ DISAGREE THAT POTENTIAL FINDING IS ACCURATEBY: [Signature] DATE: 10-4-82

IF THE "DISAGREE" BLOCK WAS CHECKED, USE THE SPACE BELOW TO PROVIDE INFORMATION THAT WOULD IMPROVE ACCURACY OR DEFINITION. (USE BACK FOR ADDITIONAL SPACE.)

1. Finding 1 is accurate. Tags are required on equipment. NCR NA-909 has been prepared to document and obtain resolution for the missing tags.
2. There is no specification requirement to have all information shown on the data sheet placed on the tag, itself. All significant information is contained on the tag. This tag is considered adequate.

D. REVIEW BY GA INITIATOR

☐ AGREE PF IS INVALID

REASON:

BY: _____ DATE: _____

REVIEW BY GA TASK LEADER

☐ AGREE PF IS INVALID

REASON:

BY: _____ DATE: _____

STATUS: AAVENDOR: HBA

PALO VERDE NUCLEAR GENERATING STATION



NONCONFORMANCE REPORT

NO NA-909PAGE 1 OF 1

1. UNIT <u>1</u>	2. MO DAY YR <u>10 | 1 | 82</u>	3. DRAWING/PART NO. <u>13MSIP001</u>	REV. <u>8</u>	4. ITEM DESCRIPTION <u>CONTAINMENT SPRAY PUMP</u>	5. ITEM LOCATION <u>40' EL. LEVEL B AUX. BLDG.</u>
6. Q CLASS <u>Q</u>	7. STARTUP SYSTEM NO. <u>SI-08</u>	8. SERIAL NO. <u>IMSIA-P03</u> <u>IMSIB-P03</u>	9. SUBCONTRACTOR/SUPPLIER/BECHEL <u>BECHTEL</u>	10. P.O. OR SPEC NO. <u>95000904</u>	11. ASME AUTHORIZED INSPECTION REQ'D. <input type="checkbox"/> YES <input checked="" type="checkbox"/> NO
12. DESCRIPTION LIST IN ORDER: NO. PCS., DWG/SPEC REQMT., PRESENT CONDITION	16. FIELD ENGR DECISION	17. <input type="checkbox"/> FIELD RECOMMENDED DISPOSITION <input type="checkbox"/> ENGINEER CONCURRENCE REQ'D. <input type="checkbox"/> ENGINEER DISPOSITION REQ'D.			
<u>1 PUMPS IMSIA-P03 & IMSIB-P03</u>					
<u>DO NOT HAVE EQUIPMENT NO. TAGS.</u>					
13. REPORTED BY: <u>D. TUTTLE</u>	15. INSPECTION/VALIDATION/REVIEW DATE		18A. REPORTABILITY EVALUATION: NOT REPORTABLE: <input type="checkbox"/> OR DER NO. _____		
19. ACCEPTANCE OF REWORK/REPAIR <input type="checkbox"/> QC ENGR _____ DATE _____ <input type="checkbox"/> FIELD ENGR _____ DATE _____			18. DISPOSITION CONCURRENCE PROJ FIELD ENGR _____ DATE _____ GROUP SUPV _____ DATE _____ AUTHORIZED INSPECTOR _____ DATE _____		
14. ASSUMED CAUSE OF DISCREPANCY <u>UNKNOWN</u> INITIATOR <u>[Signature]</u> DATE <u>10-1-82</u>			18. DISPOSITION CONCURRENCE NUCLEAR GROUP SUPV _____ (IF REQUIRED) DATE _____ PROJ ENGR _____ DATE _____ QA ENGR _____ DATE _____		

POTENTIAL FINDING REPORT
PVNGS QUALITY ASSURANCE VERIFICATION

pg. 9

PFR NO. 2426-PFR -080 REVISION Issue A

A. PREPARATION BY GA INITIATOR

AFFECTED ITEMS:

- 01MSIBP03 (Unit 1)
- 02MSIBP03 (Unit 2)

REQUIREMENT REFERENCE DOCUMENTS:

- 1. Equipment log
- 2. CE Proj. Spc 14273-PE-410-R02

BASIC REQUIREMENT:

- 1. Item should have appropriate identification
- 2. Nameplate data should conform to equipment spec. requirements

DESCRIPTION OF POTENTIAL FINDING:

- 1. No tag
- 2. Nameplate data incomplete (see attachment)

PREPARED BY:

R. Benham/R. Darwin/W. Long
R. Benham/R. Darwin/W. Long

DATE:

9/17/82

USE THE SPACE BELOW TO DOCUMENT ANY RE-REVIEW ACTION TAKEN BY INITIATOR ON THIS PFR.

SIGNATURE: _____

DATE: _____

B. REVIEW BY GA TASK LEADER

PFR NO. 2426-PFR

080

REVISION

A

☐ REQUEST RE-REVIEW

BY:

DATE:

REASONS:

☒ AGREE PF IS VALID/~~INVALID~~

BY:

DATE:

☐ DISAGREE WITH INITIATOR

BY:

DATE:

REASONS:

C., D. SEE ATTACHED SECTIONS C AND D (PAGE 3)

E. RECOMMENDATION BY FINDINGS REVIEW COMMITTEE

ADDITIONAL INFORMATION REQUIRED

DEFINITION:

☐ ADEQUATE

☐ INADEQUATE

VALIDITY:

☐ VALID

☐ INVALID

CLASSIFICATION:

☐ OBSERVATION

☐ FINDING

JUSTIFICATION

CLASSIFICATION CRITERION NO. RESULTING IN "FINDING" _____

COMMENT ON "OBSERVATION" OR "FINDING" CLASSIFICATION:

BY:

DATE:

BY:

DATE:

F. GA PROJECT MANAGER

☐ ACCEPT

☐ REJECT

BY:

DATE:

REPORT MTRO32A
VERSION 054

EQUIPMENT LOG
BY SYSTEM/DISCIPLINE/TYPE/SEQUENCE/SAFETY/SURSEQUENCE/UNIT

DATE 3/15/82
PAGE 1319

EQUIPMENT ISSUE REPORT

UNIT: **		SYSTEM: *		DISC.: **		P.O.: *		1ST. PROJCLS: **		P&ID: *		STARTUP: **	
EQUIPMENT TAG NO	DESCRIPTION			P&ID NUMBER	DRAWING CRD REV	PROJ CLSS	ENG STARTUP	AREA NO	BECHTEL SPEC/PO	P.O. REV ITEM	CODE OF ACCOUNT		
VENDOR NAME	V/PROM SRC DATE	REQD AT JOBSITE	PO DEL DATE	HORSE POWER	RPM	VENDOR DATA LOG NUMBER	WEIGHT	EQUIP RECEIVED	EQUIP INSTALLED	RELEASED TO S/U			
REMARKS			STORAGE REQNT LOCATION		PLAN CODE	ELECTRIC SCHEMATIC							
1MSIAP03 CE-IR	CONTAINMENT SPRAY PUMP 1 B-130677 060781		13MSIP001	H11	0	Q1B	15108	ZADC	13NM001	C O 2F	1A43.51		
				800.0	1800	9500090 9500090	.00	R-280581	9-151280				
2MSIAP03 CE-IR	CONTAINMENT SPRAY PUMP 1 B-181278 060781		13MSIP001	H11	0	Q1B	25108	ZADC	13NM001	O NOB	2A43.51		
				800.0	1800	9500093 ADC-F01	.00	R-181278	9-151280				
3MSIAP03 CE-IR	CONTAINMENT SPRAY PUMP 1 B-101079 060781		13MSIP001	H11	0	Q1B	35108	ZADC	13NM001	O MYO	3A43.51		
				800.0	1800	9500096 9500094	.00	R-280581	5-250281				
1MSIBP03 CE-IR	CONTAINMENT SPRAY PUMP 2 B-130677 060781		13MSIP001	C11	0	Q1B	15108	ZADD	13NM001	C O 2F	1A43.51		
				800.0	1800	9500090 9500090	.00	R-280581	9-151280				
2MSIBP03 CE-IR	CONTAINMENT SPRAY PUMP 2 B-181278 060781		13MSIP001	C11	0	Q1B	25108	ZADD	13NM001	O NOB	2A43.51		
				800.0	1800	9500093 ADD-F01	.00	R-280581	9-151280				
3MSIBP03 CE-IR	CONTAINMENT SPRAY PUMP 2 B-101079 060781		13MSIP001	C11	0	Q1B	35108	ZADD	13NM001	O MYO	3A43.51		
				800.0	1800	9500096 ADD-F01	.00	R-101079	5-250281				
1MSIAP05 CE-PULSA FEEDER	SPRAY CHEM ADD PUMP 1 B-151178 150881		13MSIP001	D14	0	Q1B							
				3.0	1800	9772700							
2MSIAP05 CE-PULSA FEEDER	SPRAY CHEM ADD PUMP 1 B-151178 150881		13MSIP001	D14	0	Q1B							
				3.0	1800	A2D-F01							
3MSIAP05 CE-PULSA FEEDER	SPRAY CHEM ADD PUMP 1 B-151178 150881		13MSIP001	D14	0	Q1B							
				3.0	1800	A2D-F01							

PACKAGE NO. 1-E-2 , PAGE OF

SYSTEM Safety Injection System

TAG NUMBERS 1MSIBP03

REPRODUCED FROM Equipment Log

DCN'S NA

FCR'S N.A.

PACKAGE NO. 1-E-2, PAGE OF
SYSTEM Safety Injection System
TAG NUMBERS 1MSIBP03
REPRODUCED FROM Equipment Log
DCN'S NA
FCR'S N.A.

P&ID-080
P3-11

PROJECT	Arizona Nuclear Power Plant - Containment Spray Pump		
SERVICE	A. C. Electric Motor Data		
1	Data by 5809-R39		
2	Motor MFR: Westinghouse Electric Corporation		
3	Frame No.: 5308-P39	Volts: 4160	Phase: 3
4	Nema Design: B	Enclosure: WP-11	Service Factor: 1
5	Sync RPM: 1800	Full Load RPM: 1770	
6	AMPS		
7	Full Load: 39.5	Locked Rotor: 555	
8	Torque 95		
9	Full Load: 2058	Pull Up 3 FL: 100	
10	Starting, % FL: 100	Breakdown, % FL: 200	
11	Efficiency		
12	Full Load: 93.4	3/4 Load: 92.9	1/2 Load: 90.3
13	Power Factor		
14	Full Load: 90.0	3/4 Load: 89.4	1/2 Load: 85.5
15	Insulation System(s)		
16	Nema Class: B		
17	Type: Thermalastic Epoxy Sealed System		
18	Mfr: Westinghouse		
19	Bearing: Westinghouse Option (NOT SHOWN)		
20			
21	Bearings		
22	Type:	Lubrication:	
23	Thrust Type: Angular Contact Ball	Lubrication: Oil	
24	Guide Type: Ball	Lubrication: Oil	
25	Type:	Lubrication:	
26	Space Heaters Wrap Around Type		
27	Watts: 240	Volts: 120	Phase: Single
28	Acceleration Time		
29	Minimum Volts: Less than 8 secs. (Approx. 4 sec)		
30	Rated Volts: Less than 4 secs. (Approx. 2 sec)		
31	Safe Locked Rotor Time: (Later).		
32	Temperature Rise: 30°C		
33	Motor Wk ² : 227		
34			

THIS INFO FROM C-E Proj. Spec 14273-PE-410 Rev. 02
BPC STATUS 1 Dated 10-23-79

Specification No. SYS30-PE-410

PACKAGE NO.	1-E-2	PAGE	OF
SYSTEM	GREEN INJECTION		
TAG NUMBERS	1.M.S.T.B.P.03		
REPRODUCED FROM	C-E Proj. Spec 14273-PE-410 (R2)		
DCN'S	None		
FCR'S	None		

11001-1

2426-PFR-080

Arizona Nuclear Power Plant - Containment Spray Pump
A. C. Electric Motor Data

1	Data By Supplier		
2	Motor Mfr: Westinghouse Electric Corporation		
3	Frame No.: 5308-239	Volts: 4160	Phase: 3 Service Factor: 1
4	Nema Design: B	Enclosure: WP-11	
5	Sync RPM: 1800	Full Load RPM: 1770	
6	AMPS		
7	Full Load: 39.5	Locked Rotor: 565	
8	Torque		
9	Full Load: 2058	Pull Up 3 FL: 100	
10	Starting, % FL: 100	Breakdown, % FL: 200	
11	Efficiency		
12	Full Load: 93.4	3/4 Load: 92.9	1/2 Load: 90.3
13	Power Factor		
14	Full Load: 90.0	3/4 Load: 89.4	1/2 Load: 85.5
15	Insulation System(s)		
16	Nema Class: B	NOT SHOWN	
17	Type: Thermalastic Epoxy Sealed System		
18	Mfr: Westinghouse		
19	Bearing: Westinghouse Option		
20			
21	Bearings		
22	Type:	Lubrication:	
23	Thrust Type: Angular Contact Ball	Lubrication: Oil	
24	Guide Type: Ball	Lubrication: Oil	
25	Type:	Lubrication:	
26	Space Heaters Wrap Around Type		
27	Watts: 240	Volts: 120	
28	Acceleration Time		
29	Minimum Volts: Less		
30	Rated Volts: Less		
31	Safe Locked Rotor Time:		
32	Temperature Rise: 30°C		
33	Motor Wk ² : 227		
34			

PACKAGE NO. 2-E-2, PAGE OF
 SYSTEM SAFETY INJECTION
 TAG NUMBERS 2-M-SIB-P03
 REPRODUCED FROM C-E PROJ. SPEC. 1.2.73-PE-410 R02
 DCN'S None
 FCR'S None

Specification No. SYS80-PE-410

Rev. 02

Data Sheet No. 6

Page 3 of 4

N001-11.05-5-4

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THIS INFO FROM C-E PROJ. SPEC 14273-PE-410 Rev. 02
 BPC STATUS 1 DATED 10-23-79

Attachment To
2426-PFR-080

REPORT HTRO32A
VERSION, 054

EQUIPMENT LOG
BY SYSTEM/DISCIPLINE/TYPE/SEQUENCE/SAFETY/SUBSEQUENCE/UNIT

DATE 3/16/82
PAGE 1319

EQUIPMENT ISSUE REPORT

UNIT: **		SYSTEM: *		DISC.: **		P.O.: *		IST.PRJCLS: **		P&ID: *		STARTUP: *	
EQUIPMENT TAG NO	DESCRIPTION			P&ID NUMBER	DRAWING CRD REV	PROJ CLSS	ENG STARTUP	AREA NO	BECHTEL SPEC/PD.	P.O. REV ITEM	CODE OF ACCOUNT		
VENDOR NAME	V/PROM SRC DATE	REQD AT JOBSITE	PO DEL DATE	HORSE POWER	RPM	VENDOR DATA LOG NUMBER	WEIGHT	EQUIP RECEIVED	EQUIP INSTALLED	RELEASED TO S/U			
REMARKS			STORAGE REQNT LOCATION		PLAN CODE	ELECTRIC SCHEMATIC							
1MSIAPO3 CE-IR	CONTAINMENT SPRAY PUMP 1 B-130677	060781	13MSIPO01 H11	0	Q1B	15108	ZADC	13NM001 R-280581	C O 2F 9-151280	1A43.51			
				800.0	1800	9500090 9500090	.00						
2MSIAPO3 CE-IR	CONTAINMENT SPRAY PUMP 1 B-181278	060781	13MSIPO01 H11	0	Q1B	25108	ZADC	13NM001 R-181278	O NOB 9-151280	2A43.51			
				800.0	1800	9500093 ADC-F01	.00						
3MSIAPO3 CE-IR	CONTAINMENT SPRAY PUMP 1 B-101079	060781	13MSIPO01 H11	0	Q1B	35108	ZADC	13NM001 R-280581	O MYO 5-250281	3A43.51			
				800.0	1800	9500096 9500094	.00						
1MSIBPO3 CE-IR	CONTAINMENT SPRAY PUMP 2 B-130677	060781	13MSIPO01 C11	0	Q1B	15108	ZADD	13NM001 R-280581	C O 2F 9-151280	1A43.51			
				800.0	1800	9500090 9500090	.00						
NO TAG													
2MSIBPO3 CE-IR	CONTAINMENT SPRAY PUMP 2 B-181278	060781	13MSIPO01 C11	0	Q1B	25108	ZADD	13NM001 R-280581	O NOB 9-151280	2A43.51			
				800.0	1800	9500093 ADD-F01	.00						
3MSIBPO3 CE-IR	CONTAINMENT SPRAY PUMP 2 B-101079	060781	13MSIPO01 C11	0	Q1B	35108	ZADD	13NM001 R-101079	O MYO 5-250281	3A43.51			
				800.0	1800	9500096 ADD-F01	.00						
1MSIAPO5 CE-PULSA FEEDER	SPRAY CHEM ADD PUMP 1 B-151178	150881	13MSIPO01 D14	0	Q1B	151							
				3.0	1800	9772700							
2MSIAPO5 CE-PULSA FEEDER	SPRAY CHEM ADD PUMP 1 B-151178	150881	13MSIPO01 D14	0	Q1B	251							
				3.0	1800	A2D-F01							
3MSIAPO5 CE-PULSA FEEDER	SPRAY CHEM ADD PUMP 1 B-151178	150881	13MSIPO01 D14	0	Q1B	351							
				3.0	1800	A2D-F01							

PACKAGE NO. 2-E-2, PAGE OF SYSTEM Safety Injection System TAG NUMBERS 2MSIBPO3 REPRODUCED FROM Equipment Log DCN'S N.A. FCR'S N.A.

PACKAGE NO. 2-E-2, PAGE OF
SYSTEM Safety Injection System
TAG NUMBERS 2MSIBPO3
REPRODUCED FROM Equipment Log
DCN'S N.A.
FCR'S N.A.

IMPACT ASSESSMENT

PFR NO. 2426-PFR-080 REVISION C

AFFECTED ITEM: Containment Spray Pump Motors - Unit No. 1 Motor No. 1MSIBP03, and Unit No. 2 Motor No. 2MSIBP03

A. PREPARATION BY GA INITIATOR:

1. WHICH OF THE FIRST TWO POTENTIAL FINDING CLASSIFICATION CRITERIA APPLIES TO THIS PFR?

Neither

1 ☐, 2 ☐,

2. IN WHAT WAY MIGHT A SUBSTANTIAL SAFETY HAZARD BE CREATED AS A RESULT OF THE VIOLATION, DISCREPANCY OR ERROR (IF 1 OR 2 ABOVE WAS CHECKED)?:

N/A

3. OTHER COMMENTS: Part 1 - APS prepared NCR NA-909 to take care of the missing equipment tag numbers. Part 2 - APS has checked and found that the disagreement between the motor data sheets and the motor nameplates is due to data sheet errors. The correct equipment is in place and BPC is in process of having data sheets corrected. Neither problem has any safety related impact to the plant. Recommend classifying as "Observations".

PREPARED BY: R. G. Benham

DATE: 10-13-82

B. PREPARATION BY GA TASK LEADER:

1. COMMENT ON ABOVE REPLIES:

Concur with Initiator's impact assessment.

2. DOES EVIDENCE EXIST OF MULTIPLE SIMILAR VIOLATIONS, DISCREPANCIES OR ERRORS? IF SO, LIST RELEVANT PFR NO'S: *PFR-077 (missing tags on inst & swgn); PFR-089 (missing tags on pump and valve).*

3. IF POTENTIAL FINDING CLASSIFICATION CRITERIA 3, 4, OR 5 APPLIES, STATE WHICH ONE:

3 ☐, 4 ☐, 5 ☐

N/A

4. WHAT IS YOUR JUDGEMENT OF THE LIKELIHOOD OF MULTIPLE SIMILAR VIOLATIONS, DISCREPANCIES OR ERRORS ACTUALLY CREATING A SUBSTANTIAL SAFETY HAZARD - AND OF WHAT NATURE?

Not likely - plant ID tag missing, but wfc. nameplate info. OK

5. OTHER COMMENTS:

PREPARED BY: *[Signature]*

DATE: 10/13/82

POTENTIAL FINDING REPORT
PVNGS QUALITY ASSURANCE VERIFICATION

PFR NO. 2426-PFR -081 REVISION Issue A

A. PREPARATION BY GA INITIATOR

AFFECTED ITEMS:

- a. Valve 2P-SGE-V103
- b. Valve 1P-AFB V129
- c. Valve 1P-AFB-V130

REQUIREMENT REFERENCE DOCUMENTS:

- a. 02-P-ZZ6-015 Rev. 6
- b. 01-P-ZZ6-015 Rev. 6
- c. 01-P-ZZ6-015 Rev. 6

BASIC REQUIREMENT:

Installed equipment be made by manufacturer specified in the reference documents.

DESCRIPTION OF POTENTIAL FINDING:

- a. Vendor for installed valve is KEROTEST. Documents show the vendor as Dresser.
- b and c. Vendor for installed valve is Dresser. Documents show the vendor as Kerotest.

PREPARED BY: P. Rasmusson *P. Rasmusson* DATE: 9/17/82

USE THE SPACE BELOW TO DOCUMENT ANY RE-REVIEW ACTION TAKEN BY INITIATOR ON THIS PFR.

SIGNATURE: _____ DATE: _____

B. REVIEW BY GA TASK LEADER

PFR NO. 2426-PFR - 081

REVISION

Issue A

☐ REQUEST RE-REVIEW

BY: _____ DATE: _____

REASONS:

☒ AGREE PF IS VALID/~~INVALID~~

BY: [Signature] DATE: 9/17/82

☐ DISAGREE WITH INITIATOR

BY: _____ DATE: _____

REASONS:

C., D. SEE ATTACHED SECTIONS C AND D (PAGE 3)

E. RECOMMENDATION BY FINDINGS REVIEW COMMITTEE

ADDITIONAL INFORMATION REQUIRED

DEFINITION: ☒ ADEQUATE ☐ INADEQUATE

VALIDITY: ☒ VALID ☐ INVALID

CLASSIFICATION: ☒ OBSERVATION ☐ FINDING

JUSTIFICATION

CLASSIFICATION CRITERION NO. RESULTING IN "FINDING" _____

'COMMENT ON "OBSERVATION" OR "FINDING" CLASSIFICATION:

Error on Valve Designation but hardware is correct.

BY: [Signature] DATE: 10/11/82

BY: _____ DATE: _____

F. GA PROJECT MANAGER

☒ ACCEPT

☐ REJECT

BY: [Signature] DATE: 10-11-82

C. REVIEW BY ORIGINAL DESIGN ORGANIZATION

PFR NO. 081

REVISION A

☒ AGREE ☐ DISAGREE THAT POTENTIAL FINDING IS ACCURATE

BY: [Signature] DATE: 10-4-82

IF THE "DISAGREE" BLOCK WAS CHECKED, USE THE SPACE BELOW TO PROVIDE INFORMATION THAT WOULD IMPROVE ACCURACY OR DEFINITION. (USE BACK FOR ADDITIONAL SPACE.)

The installation is correct, however the Valve Designation List is in error, showing the incorrect supplier for the subject valves. The data base in the System 38 has been updated to indicate the correct supplier for the subject valves.

D. REVIEW BY GA INITIATOR

☐ AGREE PF IS INVALID

REASON:

BY: _____ DATE: _____

REVIEW BY GA TASK LEADER

☐ AGREE PF IS INVALID

REASON:

BY: _____ DATE: _____

Attachment to
2426-PFR-081

REPORT MTR024A
VERSION 083

VALVE DESIGNATION LIST
BY SYS/SEQ/SAFETY/UNIT
VALVE DESIGNATION LIST UNIT 2

DATE 3/12/82
PAGE 912

UNIT: 2-2 SYSTEM: * - P.O.: * - VENDOR NAME: *
P&ID: * - SURPLUS VALVE: * DISCIPLINE: *

TAG NUMBER	SIZE	MARK NO	SYSTEM ENG S/U	PROJ CLS	RELEASE TO SHIP NO	ENV CDE	MATL CLS	LINE NO	AREA NO	PIPING DWG NUMBER	P & ID DRAWING NUMBER	CRD RV	SERIAL NUMBER
VENDOR DATA LOG NUMBER	DESIGN PRES	TEMP	OPERATION PRES	TEMP	BECHTEL SPEC/PO	P.O. ITEM REV	RECD SITE	VEND PROM AT-SITE	REOSTN CD DATE	INSTALL CD DATE	REL TO S/U CD DATE		
CODE ACCOUNT	SURPLUS VALVE	ATTACH	VENDOR NAME	VEND SHIP ORD	REMARK								
2PSGNV03R	8.00 087	2AF02 R2D	013E047	N/A DBDB 010	ZT11	13PSGF404	13MSGP002 B15 00						4
P222B-302-346	1875 0450	1100 0450	13PM222B	142 B	150480	R-300081	I-110881	C-110881					
			B	PACIFIC									
2PSGNV093	1.00 346	2AF02 R2D	009E100	N/A DBDB 007	ZT11	13PSGF404	13MSGP002 G14 00						1477
P222A-302-19	1875 0450	1100 0450	13PM222A	003		R-161280							
			N/A	CONVAL									
2PSGLV100	1.00 346	2SG01 01B	011E009	X DLBB 008	ZC11	13PSGF120	13MSGP002 G10 00						
P221A-302-114	1320 0454	1100 0450	13PM221A	067		R-160282							
			N/A	DRESSER		CONBO SHOP							
2PSGNV101	1.00 346	2AF02 R2D	009E100	N/A DBDB 007	ZT11	13PSGF404	13MSGP002 G13 00						1466
P222A-302-19	1875 0450	1100 0450	13PM222A	003		R-161280							
			N/A	CONVAL									
2PSGNV102	1.00 346	2FW01 R2D	009E100	N/A DBDB 001	ZT11	13PFWF403	13MSGP002 F14 00						1451
P222A-302-19	1875 0450	1100 0450	13PM222A	003		R-161280							
			N/A	CONVAL									
2PSGEV103	1.00 346	2SG02 01B	011E009	X DLBB 011	ZC11	13PSGF120	13MSGP002 G10 00						
P221A-302-114	1320 0454	1100 0450	13PM221A	067		R-160282							
			N/A	DRESSER		CONBO SHOP							
				IS BY KERO TEST									
2PSGEV104	1.00 345	2SG01 01B	011E009	X DLBB 002	ZCAA	13PSGF119	13MSGP002 F10 00						1196AAN
P221A-302-114	1320 0454	1100 0450	13PM221A	067									
			N/A	DRESSER									
2PSGEV105	1.00 345	2SG1 01B	011E009	X DLBB 002	ZCAA	13PSGF119	13MSGP002 F10 00						1196AAN
P221A-302-114	1320 0454	1100 0450	13PM221A	067									
			N/A	DRESSER									
2PSGEV106	1.00 345	2SG01 01B	005E015	X DLBB 002	ZCAA	13PSGF119	13MSGP002 F10 00						1196AAN
P221A-302-114	1320 0454	1100 0450	13PM221A	067									
			N/A	DRESSER									
2PSGNV107	1.00 346	2AF02 R2D	009E100	N/A DBDB 010	ZT11	13PSGF404	13MSGP002 G13 00						
P222A-302-19	1875 0450	1100 0450	13PM222A	003		R-161280							
			N/A	CONVAL									
2PSGNV108	1.00 346	2AF02 R2D	009E100	N/A DBDB 010	ZT11	13PSGF404	13MSGP002 G13 00						
P222A-302-19	1875 0450	1100 0450	13PM222A	003		R-161280							
			N/A	CONVAL									
2PSGNV109	1.00 346	2AF02 R2D	009E100	N/A DBDB 010	ZT11	13PSGF404	13MSGP002 G13 00						
P222A-302-19	1875 0450	1100 0450	13PM222A	003		R-161280							
			N/A	CONVAL									
2PSGNV110	1.00 346	2AF02 R2D	009E100	N/A DBDB 010	ZT11	13PSGF404	13MSGP002 G13 00						
P222A-302-19	1875 0450	1100 0450	13PM222A	003		R-161280							
			N/A	CONVAL									

PACKAGE NO. 2-M3, PAGE 10A OF 14
SYSTEM AUXILIARY FEEDWATER
TAG NUMBERS 2PSGEV103
REPRODUCED FROM 02-P-226-015, Rev. 6
DCN'S
FCR'S

Attachment 1
2426-PFR-081 A

Page 4

SVCS02 1179

Attachment to
2426-PFR-081

11. 01 010724A
12101 012

VALVE DESIGNATION LIST
BY SYS/SEQ/SAFETY/UNIT
VALVE DESIGNATION LIST UNIT 1 AND COMMON.

DATE 3/04/82
PAGE 12

UNIT: A-1 SYSTEM: P.O.: VENDOR NAME: DISCIPLINE: N
P&ID: SURPLUS VALVE:

TAG NUMBER	SIZE	MARK NO	SYSTEM ENG S/U	PROJ CLS	RELEASE TO SHIP NO	ENV CDE	MATL CLS	LINE NO	AREA NO	PIPING DWG NUMBER	P & ID DRAWING NUMBER	CRD RV	SERIAL NUMBER
VENDOR DATA LOG NUMBER	DESIGN PRES	TEMP	OPERATION PRES	TEMP	BECHTEL SPEC/PO	P.O. ITEM REV	RECD SITE	VEND PROM AT SITE	REQSIN CD DATE	INSTALL CD DATE	REL TO S/U CD DATE		
CODE ACCOUNT	SURPLUS VALVE	ATTACH	VENDOR NAME	VEND SHP ORD	REMARK								
1PAFBV129	.50	329	1AF01 01B	009-002	XX DCBA 006	ZCAA	13PAFF133	13MAFP001 E01					
P221C-64		1675 0120		1425 0075 13PM221C	021			I-260181	C-240281				
			N/A	KEROTEST				FROM DCP					
1PAFBV130	.50	329	1AF01 01B	009-002	XX DCBA 006	ZCAA	13PAFF133	13MAFP001 E01					
P221C-64		1675 0120		1425 0075 13PM221C	021			I-260181	C-240281				
			N/A	KEROTEST				FROM DCP					
1PAFAV131	3.45	N/	1AF03		AE1 005B	500	575	FF131	AFPO01070 7P2 21				
A-302-141 13PA 006		1AF03		AQ1C									
1PAFNV131	1.00	345	1AF03 SUR	021E-006	XX DBCB 030	ZCAA	13PAFF131	13MAFP001 G07 07					
P221A-141		1390 0585		1250 0575 13PM221A	141			I-291281	C-291281				
			N/A	DRESSER									
1PAFAV132	1.00	378	1AF03 01C		HBCB 013								
01		0005 0230		0005 0230 13PM221CO				6M086					
003				KEROTEST									
1PAFNV133	6.00	350	1AF71 R2D		DCDA 061								
01		1600 0120		1425 0075 13PM222B									
				PACIFIC									
1PAFNV134	6.00	075	1AF71 R2D		DCDA 061								
01		1600 0120		1425 0075 13PM222B									
				PACIFIC									
1PAFNV135	.50	328	1AF71 R2D		DCDA 061								
01		1600 0120		1425 0075 13PM222A				M127					
				CONVAL									
1PAFNV136	.50	328	1AF71 R2D		DCDA 061								
01		1600 0120		1425 0075 13PM222A				M127					
				CONVAL									
1PAFAV137	6.00	592	1AF03 01C	017-001	XX DCCA 009	ZCAA	13PAFF132	13MAFP001 08					
P221B-302-103		1675 0120		1425 0075 13PM221B	054			I-291281	C-291281				
			N/A	ANCHOR/DARLING				2M294					
1PAFBV138	6.00	592	1AF01 01C	017-001A	XX DCCA 011		13PAFF133	13MAFP001 C05 08					
P221B-302-103		1675 0120		1425 0075 13PM221B	054								
			N/A	ANCHOR/DARLING				2M294					

TORREY PINES TECHNOLOGY
ARIZONA PUBLIC SERVICE—PVNGS

PACKAGE NO. 1-M2, PAGE OF
SYSTEM AUXILIARY FEEDWATER
TAG NUMBERS 1PAFBV129, 1PAFBV130, 1PAFNV132
REPRODUCED FROM 01-P-736-015, REV. 6
DCN'S NONE
FCR'S NONE

SV0002 11/79

Attachment 2 Page 28 of 28
2426-PFR-081 A

Bechtel Power Corporation

Engineers - Constructors

12400 East Imperial Highway

Norwalk, California 90650

MAIL ADDRESS

P.O. BOX 60860 - TERMINAL ANNEX, LOS ANGELES, CALIFORNIA 90060

TELEPHONE: (213) 864-6011



B/TPT-E-42037

MOC 221234

October 12, 1982

PFR-081
pg. 6

Torrey Pines Technology
Post Office Box 81608
San Diego, CA 92138

Attention: Mr. W. A. Simon, Project Manager

Subject: Arizona Nuclear Power Project
PFR-081 - Data Base Update
File: D.46.02

Reference: TPT:151:WAS:82

Dear Mr. Simon:

The attached Data Base update corrects the incorrectly listed valves as noted in the subject PFR. This information is being sent at the request of W.E. Ide-APS.

Very truly yours,

BECHTEL POWER CORPORATION

A handwritten signature in dark ink, appearing to read "J. E. Mahlmeister", is written over the typed name.

J. E. Mahlmeister
Project Engineer - TPT Evaluation
Los Angeles Power Division

JEM/mh

Enclosure: Valve List Update Computer Printout (3 pages)

cc: E. E. Van Brunt, Jr. w/encl.

DR330C

VALVE REQUIREMENTS MASTERFILE UPDATE
C H A N G E

TIME 9:19:26

PFR-081

Page 1 of 3

TAG NUMBER	MARK NO	ATTACH CODE	ENV CDE	MATL CLAS	VALVE SIZE	DESIGN PRES	TEMP	OPERATING PRES	TEMP	LINE NO	PRJ CLS
2PSGEV103	345	N/A	X	DLBB	1.00	1320	0434	1100	0430	011	Q1B

P&I DRAWING NUMBER	CRD REV	BECHTEL SPEC/PO	PO ITEM REV	RELEASE TO SHIP (CPOR)	VENDOR DATA LOG NUMBER	VENDOR SHOP ORDER
13MSGP002	C10 00	13PM221C	019	008E002	P221C-60	

VENDOR NAME	VENDOR PROM CODE DATE	PT CD	CLN CLS	PIPING DRAWING REV	AREA NO	CODE OF ACCOUNT	CDS IND
KEROTEST				13PSGF120	ZC11		Y

PLAN CODE	JOBSITE REQ 'D	REMARKS	S/U SYS	SURPLUS VALVE NO	WHSE REQUIS
		AS-BUILT	2S002		R 160282

SERIAL NUMBER	MANUFACTURER NAME
FAG20-2	

CMD1=EXIT HELP KEY ACTIVE
WARNING- RECORD IS INSTALLED

PFR-081
pg. 7

DR330C

VALVE REQUIREMENTS MASTERFILE UPDATE
C H A N G E

TIME 9:20:25

PFR-081

Page 2 of 3

TAG NUMBER	MARK NO	ATTACH CODE	ENV CDE	MATL CLAS	VALVE SIZE	DESIGN PRES	OPERATING TEMP	LINE PRES	TEMP NO	PRJ CLS
1PAFBV129	329	N/A	XX	DCBA	.50	1675	0120	1425	0075	006 Q1B

P&I DRAWING NUMBER	BECHTEL CRD REV	PO SPEC/PO	RELEASE TO ITEM REV	VENDOR DATA SHIP (CPOR)	VENDOR LOG NUMBER	VENDOR SHOP ORDER
13MAFP001	E01	13PN221A	143	014E004	P221A-139	

VENDOR NAME	VENDOR FROM CODE DATE	PT CD	CLN CLS	PIPING DRAWING	AREA REV	CODE OF NO ACCOUNT	CDS IND
<u>DRESSER</u>				13PAFF133		ZCAA	Y

PLAN CODE	JOBSITE REQ 'D	REMARKS	S/U SYS	SURPLUS VALVE NO	WHSE REQUIS
		AS-BUILT	1AF01		R 070982

SERIAL NUMBER	MANUFACTURER NAME
H627AAM	

CMD1=EXIT HELP KEY ACTIVE
WARNING- RECORD IS INSTALLED

PFR-081
P5.8

DR330C VALVE REQUIREMENTS MASTERFILE UPDATE TIME 9:21:08
CHANGE

TAG NUMBER	MARK NO	ATTACH CODE	ENV CDE	MATL CLAS	VALVE SIZE	DESIGN PRES	TEMP TEMP	OPERATING PRES	TEMP TEMP	LINE NO	PRJ CLS
1PAFBV130	329	N/A	XX	DCBA	.50	1675	0120	1425	0075	006	Q1B

P&I DRAWING NUMBER	CRD REV	BECHTEL SPEC/PO	PO ITEM REV	RELEASE TO SHIP (CPOR)	VENDOR DATA LOG NUMBER	VENDOR SHOP ORDER
13MAFP001	E01	13PM221A	143	014E004	P221A-139	

VENDOR NAME	VENDOR PROM CODE	PT DATE	CLN CLS	PIPING DRAWING	AREA NO	CODE OF ACCOUNT	CDS IND
DRESSER				13PAFF133	ZCAA		Y

PLAN CODE	JOB SITE REQ 'D	REMARKS	S/U SYS	SURPLUS VALVE NO	WHSE REQUIS
		AS-BUILT	1AF01		R 070982

SERIAL NUMBER	MANUFACTURER NAME
H628AAM	

CMD1=EXIT HELP KEY ACTIVE
WARNING- RECORD IS INSTALLED

PFR-081
Pg. 9

IMPACT ASSESSMENT

PFR NO. 2426-PFR-081 REVISION Issue A

AFFECTED ITEM: Valve 2P-SGE-V103; Valve 1P-AFB-V129; Valve 1P-AFB-V130

A. PREPARATION BY GA INITIATOR:

- 1. WHICH OF THE FIRST TWO POTENTIAL FINDING CLASSIFICATION CRITERIA APPLIES TO THIS PFR?
1 ☐, 2 ☐,
- 2. IN WHAT WAY MIGHT A SUBSTANTIAL SAFETY HAZARD BE CREATED AS A RESULT OF THE VIOLATION, DISCREPANCY OR ERROR (IF 1 OR 2 ABOVE WAS CHECKED)?:

3. OTHER COMMENTS: This discrepancy does not create a substantial safety hazard.

PREPARED BY: R. D. Phelps *R.D. Phelps* *Pete Roman* DATE: 10-11-82

B. PREPARATION BY GA TASK LEADER:

- 1. COMMENT ON ABOVE REPLIES:
Concur with Initiator's impact assessment.
- 2. DOES EVIDENCE EXIST OF MULTIPLE SIMILAR VIOLATIONS, DISCREPANCIES OR ERRORS? IF SO, LIST RELEVANT PFR NO'S:
N/A
- 3. IF POTENTIAL FINDING CLASSIFICATION CRITERIA 3, 4, OR 5 APPLIES, STATE WHICH ONE:
3 ☐, 4 ☐, 5 ☐ N/A
- 4. WHAT IS YOUR JUDGEMENT OF THE LIKELIHOOD OF MULTIPLE SIMILAR VIOLATIONS, DISCREPANCIES OR ERRORS ACTUALLY CREATING A SUBSTANTIAL SAFETY HAZARD - AND OF WHAT NATURE?
Not likely

5. OTHER COMMENTS:

PREPARED BY: *[Signature]* DATE: 10/11/82

POTENTIAL FINDING REPORT
PVNGS QUALITY ASSURANCE VERIFICATION

PFR NO. 2426-PFR-082 REVISION Final C

10-12-82

I

A. PREPARATION BY GA INITIATOR

AFFECTED ITEMS:

Unit 3 instruments as follows:

1. Temperature elements: 03JAENTE080, and 03JAENTE082
2. Valve position transmitters: 03JSIBZT0615, 03JSIBZT658, and 03JSIBZT0679

REQUIREMENT REFERENCE DOCUMENTS:

Instrumentation index 13-J-ZZI-001, Rev. 13

P&I Diagram 13-M-AFP-001, Rev. 10

Drawing No. 13-J-ZZS-001, Rev. 0, Instructions for Instrument Tagging. (Rev. C)

BASIC REQUIREMENT:

Instruments should be properly identified with permanent tags in accordance with Drawing No. 13-J-ZZS-001, Rev. 0, Copy attached (Rev. C)

DESCRIPTION OF POTENTIAL FINDING:

Instrument identification tags are missing on the above instruments in Unit 3.

~~[NOTE: Rev. B clarifies page 1 of the PFR and deletes reference to valves HV 658 and HV689, which have been included in other PFRs already.]~~

10-12-82

PREPARED BY: R. E. Benham DATE: 10-11-82

USE THE SPACE BELOW TO DOCUMENT ANY RE-REVIEW ACTION TAKEN BY INITIATOR ON THIS PFR.

See attached page 1A

SIGNATURE: R. E. Benham DATE: 10-11-82

PREPARED BY GA INITIATOR/TASK LEADER

PAGE NO. 1A

Further discussion with the on-site organization (APS Quality Assurance, and Bechtel Field Engineering) indicates that the Plant ID tags are normally attached prior to installing the equipment in the plant, but not always. It was further indicated that such tags, even if previously installed, may be lost or damaged during the course of construction activities. Recognizing this situation, procedures have been established which require that "a final review of all ID markers will be made by Construction prior to turn-over to APS to ensure that all damaged markers are in place." (Refer to WP/P-QCI 251.0, Appendix I, Section B, Item 7 for raceway ID, PFR-078.) Section 7.5.7 of WP/P-QCI 31.0, Revision 10, states: "Check all components are properly tagged and labeled". These procedures are intended to ensure that tagging is properly completed and checked at turn-over by BPC to APS. Since Unit 3 equipment is currently being installed, such missing tags as indicated above would not constitute a potential finding in this case. I agree that the PFR may be considered invalid.

B. REVIEW BY GA TASK LEADER

PFR NO. 2426-PFR - 082

REVISION C

☐ REQUEST RE-REVIEW

BY: _____ DATE: _____

REASONS:

☒ AGREE PFR IS ~~VALID~~/INVALIDBY: *[Signature]* DATE: 10/11/82☐ DISAGREE WITH INITIATOR

BY: _____ DATE: _____

REASONS:

See Rev. B, Part B.
Additional information and format changes
requested by the Findings Review Committee
are the reason for Rev. C.

C., D. SEE ATTACHED SECTIONS C AND D (PAGE 3)

E. RECOMMENDATION BY FINDINGS REVIEW COMMITTEE

DEFINITION: ☒ ADEQUATE ☐ INADEQUATEVALIDITY: ☐ VALID ☒ INVALIDCLASSIFICATION: ☐ OBSERVATION ☐ FINDING

JUSTIFICATION

CLASSIFICATION CRITERION NO. RESULTING IN "FINDING" _____

COMMENT ON "OBSERVATION" OR "FINDING" CLASSIFICATION:

ADDITIONAL INFORMATION REQUIRED

BY: *S. d. Koutz* DATE: 10/12/82

BY: _____ DATE: _____

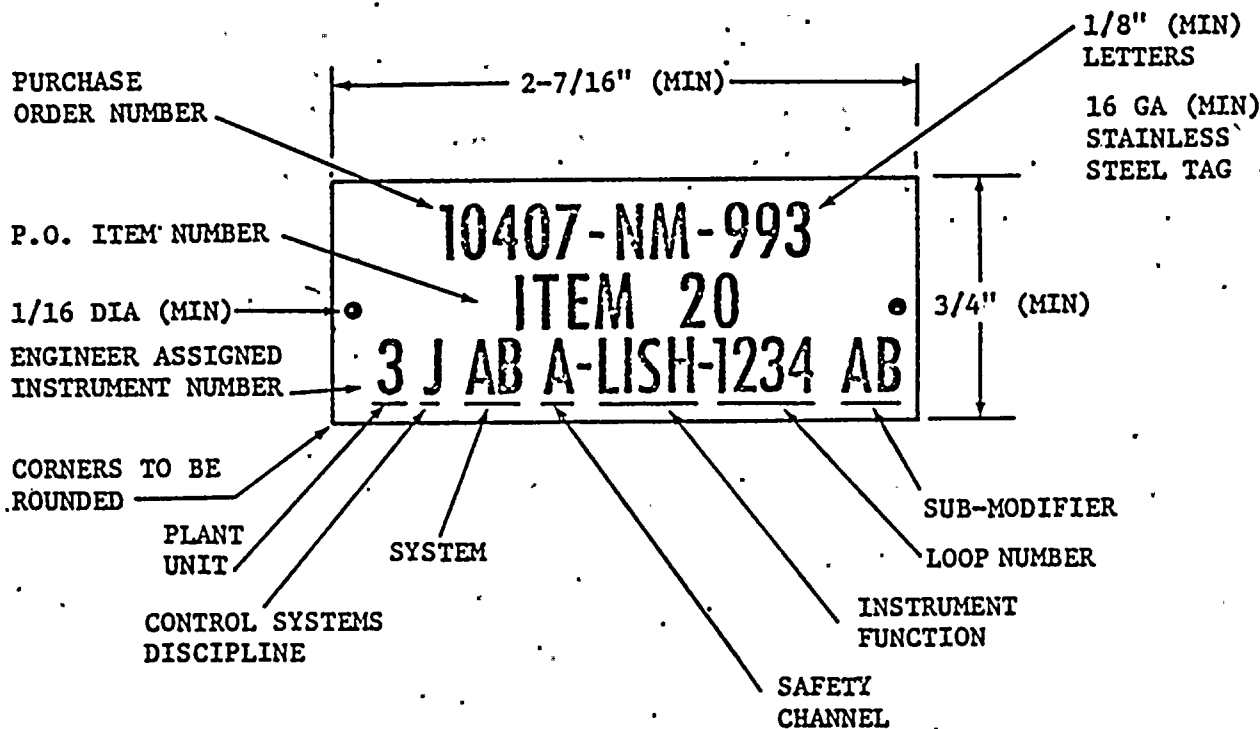
F. GA PROJECT MANAGER

☒ ACCEPT☐ REJECTBY: *[Signature]* DATE: 10-13-82

INSTRUCTIONS FOR INSTRUMENT TAGGING

Attachment To
2426-PFR-082
Rev. C, pg. 3

1. Each instrument, control valve, and device designated in accordance with ISA-S5.1-1973, Instrumentation Symbols and Identification, shall be tagged with a stainless steel tag as shown below. The tag shall be attached to the instrument with stainless steel rivets, screws or wire.
2. Rivets or screws are the preferred means of attachment. Stainless steel wire is the least desired alternate.
3. Wiring of identification tags to components is to be provided when component pressure boundary integrity or device surface contour and size precludes mounting with rivets or screws. Wiring is to be 20 AWG solid stainless steel wire secured at both tag ends.
4. Tagging information shall include the purchase order number, P.O. item number, and instrument number embossed, engraved or impression stamped on the tag as shown on the example below.



6-27-75		Issued for Fabrication		BY	CHK	DESIGN SUPV.	GROUP SUPV.	PROJ ENGR
No.	DATE	REVISIONS		BY	CHK	DESIGN SUPV.	GROUP SUPV.	PROJ ENGR
SCALE		DESIGNED		DRAWN		OFFICE CHIEF		
ORIGIN CS LAPD ANPP		ARIZONA PUBLIC SERVICE COMPANY PALO VERDE NUCLEAR GENERATING STATION		JOB NO. 10407		DRAWING NO.		
						13-J-ZZS-001		
						SHEET 1 OF 1		

POTENTIAL FINDING REPORT
PVNGS QUALITY ASSURANCE VERIFICATION

pg. 4

PFR NO. 2426-PFR -082 REVISION B

A: PREPARATION BY GA INITIATOR

AFFECTED ITEMS:

Unit 3 instruments, as follows:

1. Temperature elements: 03JAENTIE080, and 03JAENTIE082
2. Valve position transmitters: 03JSIBZT0615, 03JSIBZT658, and 03JSIBZT0679

REQUIREMENT REFERENCE DOCUMENTS:

Instrumentation index 13-J-ZZI-001, Rev. 13
P&I Diagram 13-M-AFP-001, Rev. 10

BASIC REQUIREMENT:

Instruments should be properly identified with permanent tags.

DESCRIPTION OF POTENTIAL FINDING:

Instrument identification tags are missing on the above instruments in Unit 3.

[NOTE: Rev. B clarifies page 1 of the PFR and deletes reference to valves HV-658 and HV689, which have been included in other PFRs already.]

PREPARED BY:

RGB/PP
R. Benham, R. Darwin, W. Long

DATE: 9-24-82

USE THE SPACE BELOW TO DOCUMENT ANY RE-REVIEW ACTION TAKEN BY INITIATOR ON THIS PFR.

Further discussion with the on-site organizations indicates that the plant ID tag may be installed prior to installation, but not always. The usual procedure is to call for permanent installation of such ID tags after installation and verification is complete if they are found to be missing at that time. Since the Unit 3 equipment is currently being installed, such missing tags as indicated above would not constitute a potential finding in this case. I agree that this PFR may be considered invalid.

SIGNATURE:

RGB/PP
W Long

DATE: 9-24-82

B. REVIEW BY GA TASK LEADER

PFR NO. 2426-PFR

- 082

pg. 5

REVISION

B

☐ REQUEST RE-REVIEW

BY:

DATE:

REASONS:

☒ AGREE PFR IS ~~VALID~~/INVALID

BY:

DATE:

☐ DISAGREE WITH INITIATOR

BY:

DATE:

REASONS:

Initiators' re-review comments substantiate my original recommendation to invalidate this PFR.

C., D. SEE ATTACHED SECTIONS C AND D (PAGE 3)

E. RECOMMENDATION BY FINDINGS REVIEW COMMITTEE

ADDITIONAL INFORMATION REQUIRED

DEFINITION:

☐ ADEQUATE

☒ INADEQUATE

VALIDITY:

☐ VALID

☐ INVALID

CLASSIFICATION:

☐ OBSERVATION

☐ FINDING

See note on PFR 079

JUSTIFICATION

CLASSIFICATION CRITERION NO. RESULTING IN "FINDING" _____

COMMENT ON "OBSERVATION" OR "FINDING" CLASSIFICATION:

BY:

DATE:

BY:

DATE:

F. GA PROJECT MANAGER

☐ ACCEPT

☐ REJECT

BY:

DATE:

POTENTIAL FINDING REPORT
PVNGS QUALITY ASSURANCE VERIFICATION

pg. 6

PFR NO. 2426-PFR -082 REVISION Issue A

A. PREPARATION BY GA INITIATOR

AFFECTED ITEMS:

03JAFNTE-0080	03JSIB ^Z ET-0679
03JAFNTE-0082	03JSIBHV-0658
03JSIBZT-0615	03JSIBHV-0689
03JSIB ^Z ET-0658	

REQUIREMENT REFERENCE DOCUMENTS:

Instrument index 13-J-ZZI-001

BASIC REQUIREMENT:

Items should have appropriate identification

DESCRIPTION OF POTENTIAL FINDING:

Plant
Plant identification tag missing (attachments - 6 sheets)

PREPARED BY: R. Benham/R. Darwin/W. Long

DATE: 9/17/02

USE THE SPACE BELOW TO DOCUMENT ANY RE-REVIEW ACTION TAKEN BY INITIATOR ON THIS PFR.

SEE COVER SHEET, REV. B

SIGNATURE: RGB/DRW Long

DATE: 9-24-02

B. REVIEW BY GA TASK LEADER

PFR NO. 2426-PFR - 082

pg. 7 / Issue A
REVISION A☒ REQUEST RE-REVIEWBY: PropleDATE: 9/20/82

REASONS:

The affected items (missing plant ID tags) are all in Unit 3 which is still under construction. The missing tags on these items can be attributed to the incomplete status of construction. I recommend that this PFR be invalidated on this basis.

☒ AGREE PFR IS ~~VALID~~/INVALIDBY: PropleDATE: 9/24/82☐ DISAGREE WITH INITIATOR

BY: _____

DATE: _____

REASONS:

See Rev. B.

C., D. SEE ATTACHED SECTIONS C AND D (PAGE 3)

E. RECOMMENDATION BY FINDINGS REVIEW COMMITTEE

ADDITIONAL INFORMATION REQUIRED

DEFINITION:

☐ ADEQUATE☐ INADEQUATE

VALIDITY:

☐ VALID☐ INVALID

CLASSIFICATION:

☐ OBSERVATION☐ FINDING

JUSTIFICATION

CLASSIFICATION CRITERION NO. RESULTING IN "FINDING" _____

COMMENT ON "OBSERVATION" OR "FINDING" CLASSIFICATION:

BY: _____

DATE: _____

BY: _____

DATE: _____

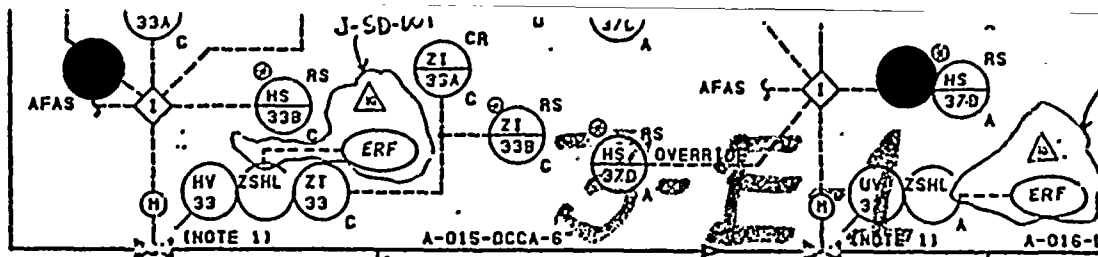
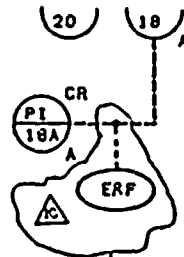
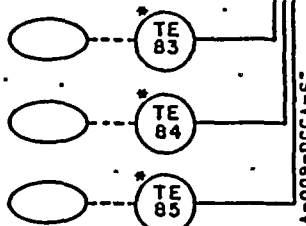
F. GA PROJECT MANAGER

☐ ACCEPT☐ REJECT

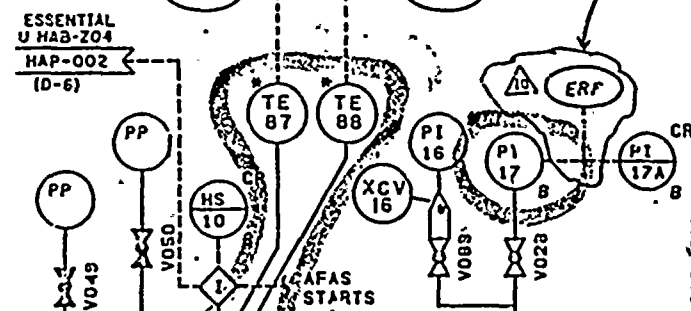
BY: _____

DATE: _____

1-009-0001-0	100
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DCP # J-SD-001



800S-DCCA-6

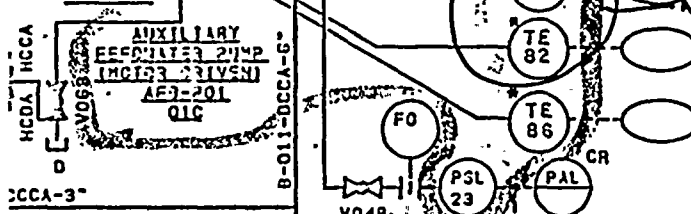
AFB-F01

V024

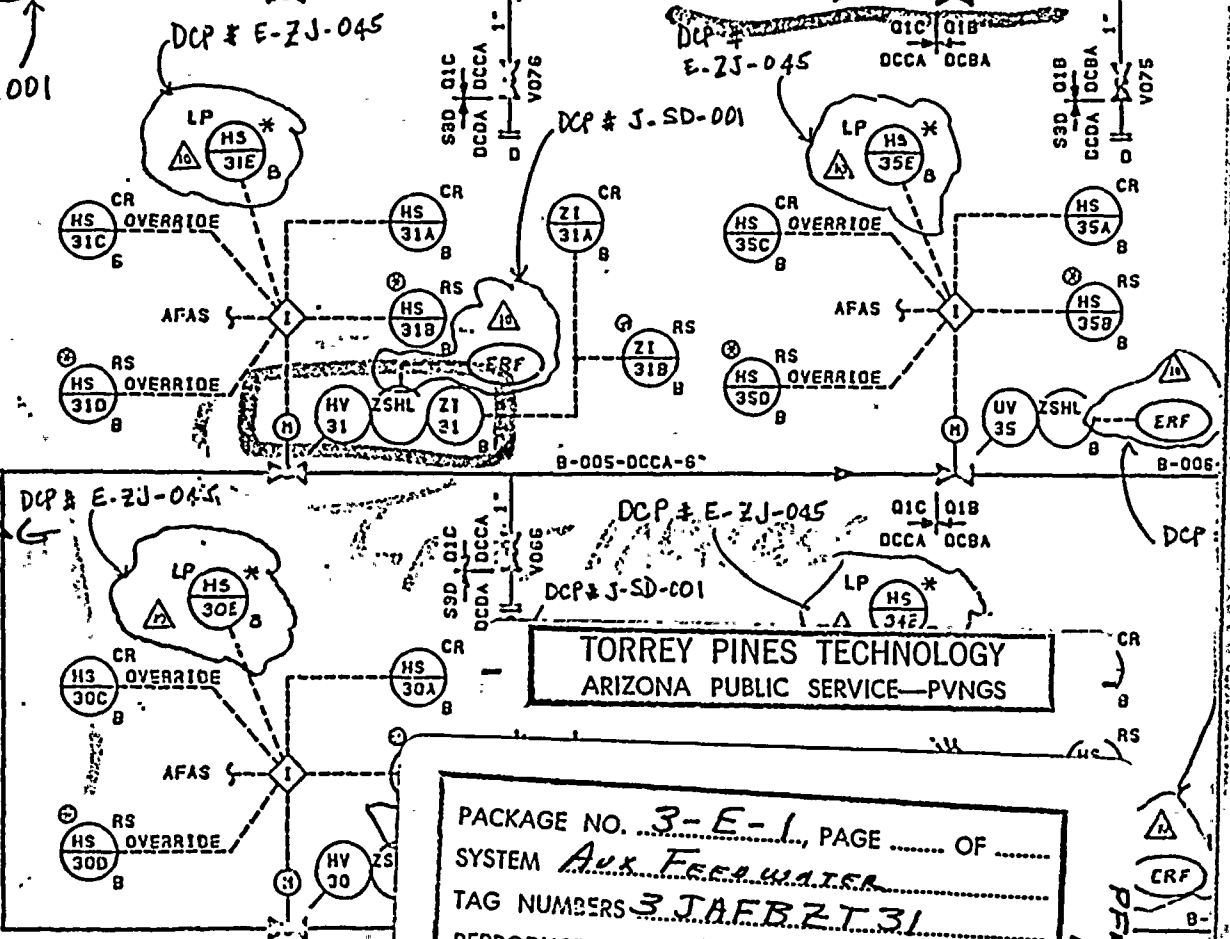
V025

LO

TE 80



Attachment To
2426-PFR-082



TORREY PINES TECHNOLOGY
ARIZONA PUBLIC SERVICE—PVNGS

PACKAGE NO. 3-E-1, PAGE OF
SYSTEM Aux Feedwater
TAG NUMBERS 3JAEBZT31
REPRODUCED FROM 13-M-AFP-001 R10
DCN'S No Applicable DCN's
FCR'S " " FCR's

[illegible]

ARIZONA IN
PALO
CONE

SYSTEM / SEQUENCE

Attachment To
2426-PFR-082

INSTRUMENT NUMBER	SERVICE DESCRIPTION	LOGIC DIAG	UNIT DWG	PURCHASE ORDER NO	DATA SHEET	INST. LOCA- TION	DESIGN CLASS	INSTALL DETAIL	VENDOR INSTRUMENT NUMBER	ELECT. SYM. DIAG.					
02JSIBZT 0614	SI TK 1 ISOL	NA	VP	N-001	VP	SIF136	01E	NA	ZT614	NA	EL	NA	QF1	7	
03JSIBZT 0614	SI TK 1 ISOL	NA	VP	N-001	VP	SIF136	01E	NA	ZT614	NA	EL	NA	QF1	7	
01JSIBHS 0615	LPSI FLOW CONTROL TO RC 2A	NA	NA	J-200	NA	ZJF009	01E	NA		SIB007	EL	RMBB02	QF1	8	
02JSIBHS 0615	LPSI FLOW CONTROL TO RC 2A	NA	NA	J-200	NA	ZJF009	01E	NA		SIB007	EL	RMBB02	QF1	8	
03JSIBHS 0615	LPSI FLOW CONTROL TO RC 2A	NA	NA	J-200	NA	ZJF009	01E	NA		SIB007	EL	RMBB02	QF1	8	
01JSIBUV 0615	LPSI FLOW CONTROL TO RC 2A	NA	NA	N-001	VP	SIF208	01B	NA		SIB007	EM	NA	N	QF1	6
02JSIBUV 0615	LPSI FLOW CONTROL TO RC 2A	NA	NA	N-001	VP	SIF208	01B	NA		SIB007	EM	NA	N	QF1	6
03JSIBUV 0615	LPSI FLOW CONTROL TO RC 2A	NA	NA	N-001	VP	SIF208	01B	NA		SIB007	EM	NA	N	QF1	6
01JSIBZI 0615	LPSI FLOW CONTROL TO RC 2A	NA	VP	J-200	NA	ZJF009	01E	NA	ZI615	SIB007	EL	RMBB02	QF1	11	
02JSIBZI 0615	LPSI FLOW CONTROL TO RC 2A	NA	VP	J-200	NA	ZJF009	01E	NA	ZI615	SIB007	EL	RMBB02	QF1	11	
03JSIBZI 0615	LPSI FLOW CONTROL TO RC 2A	NA	VP	J-200	NA	ZJF009	01E	NA	ZI615	SIB007	EL	RMBB02	QF1	11	
01JSIBZT 0615	LPSI FLOW CONTROL TO RC 2A	NA	VP	N-001	VP	SIF208	01E	NA	ZT615	SIB007	EL	NA	QF1	7	
02JSIBZT 0615	LPSI FLOW CONTROL TO RC 2A	NA	VP	N-001	VP	SIF208	01E	NA	ZT615	SIB007	EL	NA	QF1	7	
03JSIBZT 0615	LPSI FLOW CONTROL TO RC 2A	NA	VP	N-001	VP	SIF208	01E	NA	ZT615	SIB007	EL	NA	QF1	7	
01JSIBHS 0616	HPSI 2 FLOW CONTROL TO RC 2A	NA	NA	J-200	NA	ZJF009	01E	NA	NA	SIB011	EL	RMBB02	QF1	11	
02JSIBHS 0616	HPSI 2 FLOW CONTROL TO RC 2A	NA	NA	J-200	NA	ZJF009	01E	NA	NA	SIB011	EL	RMBB02	QF1	11	
03JSIBHS 0616	HPSI 2 FLOW CONTROL TO RC 2A	NA	NA	J-200	NA	ZJF009	01E	NA	NA	SIB011	EL	RMBB02	QF1	11	
01JSIBUV 0616	HPSI 2 FLOW CONTROL TO RC 2A	NA	NA	N-001	VP	SIF204	01E	NA							
02JSIBUV 0616	HPSI 2 FLOW CONTROL TO RC 2A	NA	NA	N-001	VP	SIF204	01E	NA							
03JSIBUV 0616	HPSI 2 FLOW CONTROL TO RC 2A	NA	NA	N-001	VP	SIF204	01E	NA							
01JSIBZI 0616	HPSI 2 FLOW CONTROL TO RC 2A	NA	NA	J-200	NA	ZJF009	01E	NA							
02JSIBZI 0616	HPSI 2 FLOW CONTROL TO RC 2A	NA	NA	J-200	NA	ZJF009	01E	NA							
03JSIBZI 0616	HPSI 2 FLOW CONTROL TO RC 2A	NA	NA	J-200	NA	ZJF009	01E	NA							
01JSIBZT 0616	HPSI 2 FLOW CONTROL TO RC 2A	NA	NA	N-001	VP	SIF204	01E	NA							

PACKAGE NO. 3-E-3, PAGE _____ OF _____
 SYSTEM Safety Injection System
 TAG NUMBERS 03JSIBZT 0615
 REPRODUCED FROM Instrument Index
 DCN'S N.A.
 FCR'S N.A.

PFR-082
pg. 9

REPORT DATE: 7/29/82

ANPL-
INSTRUMENT INDEX:PAG. 1753
DWG NO: 13-J-221-001
REV: 13

SYSTEM / SEQUENCE

Attachment to
2426-PFR-082

INSTRUMENT NUMBER	SERVICE DESCRIPTION	LOGIC DIAG	COND DYIC	PURCHASE ORDER NO	DATA SHEET	INST. LOCA- TION	DESIGN CLASS	INSTALL DETAIL	VENDOR INSTRUMENT NUMBER	ELECT. SCHEM. DIAG.							
02JSIAHV 0657	S/D CLG TEMP CONTROL TRAIN A	NA	NA	N-001	VP	SIF207Q1B	NA	NA	<	SIB027EM	NA	N	QF1	P	6		
03JSIAHV 0657	S/D CLG TEMP CONTROL TRAIN A	NA	NA	N-001	VP	SIF207Q1B	NA	NA	<	SIB027EM	NA	N	QF1	P	6		
01JSIAZI 0657	S/D CLG TEMP CONTROL TRAIN A	NA	VP	J-200	NA	ZJF009Q1E	NA	NA	Z1657	NA	EL	RMAB02	QF1	J	11		
02JSIAZI 0657	S/D CLG TEMP CONTROL TRAIN A	NA	VP	J-200	NA	ZJF009Q1E	NA	NA	Z1657	NA	EL	RMAB02	QF1	J	11		
03JSIAZI 0657	S/D CLG TEMP CONTROL TRAIN A	NA	VP	J-200	NA	ZJF009Q1E	NA	NA	Z1657	NA	EL	RMAB02	QF1	J	11		
01JSIAZT 0657	S/D CLG TEMP CONTROL TRAIN A	NA	VP	N-001	VP	SIF207Q1E	NA	NA	Z1657	NA	EL	NA	QF1	P	7		
02JSIAZT 0657	S/D CLG TEMP CONTROL TRAIN A	NA	VP	N-001	VP	SIF207Q1E	NA	NA	Z1657	NA	EL	NA	QF1	P	7		
03JSIAZT 0657	S/D CLG TEMP CONTROL TRAIN A	NA	VP	N-001	VP	SIF207Q1E	NA	NA	Z1657	NA	EL	NA	QF1	P	7		
01JSIBHS 0658	S/D CLG TEMP CONTROL TRAIN B	NA	NA	J-200	NA	ZJF009Q1E	NA	NA									
02JSIBHS 0658	S/D CLG TEMP CONTROL TRAIN B	NA	NA	J-200	NA	ZJF009Q1E	NA	NA									
03JSIBHS 0658	S/D CLG TEMP CONTROL TRAIN B	NA	NA	J-200	NA	ZJF009Q1E	NA	NA									
01JSIBHV 0658	S/D CLG TEMP CONTROL TRAIN B	NA	NA	N-001	VP	SIF208Q1B	NA	NA									
02JSIBHV 0658	S/D CLG TEMP CONTROL TRAIN B	NA	NA	N-001	VP	SIF208Q1B	NA	NA									
03JSIBHV 0658	S/D CLG TEMP CONTROL TRAIN B	NA	NA	N-001	VP	SIF208Q1B	NA	NA									
01JSIBZI 0658	S/D CLG TEMP CONTROL TRAIN B	NA	VP	J-200	NA	ZJF009Q1E	NA	NA									
02JSIBZI 0658	S/D CLG TEMP CONTROL TRAIN B	NA	VP	J-200	NA	ZJF009Q1E	NA	NA									
03JSIBZI 0658	S/D CLG TEMP CONTROL TRAIN B	NA	VP	J-200	NA	ZJF009Q1E	NA	NA	Z1658	NA	EL	RMAB02	QF1	J	11		
01JSIBZT 0658	S/D CLG TEMP CONTROL TRAIN B	NA	VP	N-001	VP	SIF208Q1E	NA	NA	Z1658	NA	EL	NA	QF1	P	7		
02JSIBZT 0658	S/D CLG TEMP CONTROL TRAIN B	NA	VP	N-001	VP	SIF208Q1E	NA	NA	Z1658	NA	EL	NA	QF1	P	7		
03JSIBZT 0658	S/D CLG TEMP CONTROL TRAIN B	NA	VP	N-001	VP	SIF208Q1E	NA	NA	Z1658	NA	EL	NA	QF1	P	7		
01JSIBHS 0659	TRAIN B RECIRC TO RWT	NA	NA	J-200	NA	ZJF009Q1E	NA	NA				RMAB02	QF1	J	6		
02JSIBHS 0659	TRAIN B RECIRC TO RWT	NA	NA	J-200	NA	ZJF009Q1E	NA	NA				RMAB02	QF1	J	6		
03JSIBHS 0659	TRAIN B RECIRC TO RWT	NA	NA	J-200	NA	ZJF009Q1E	NA	NA				RMAB02	QF1	J	6		
01JSIBUV 0659	TRAIN B RECIRC TO RWT	NA	NA	N-001	VP	SIF204Q1B	NA	NA	<	SIB016ES	NA	N	QF1	P	6		

PACKAGE NO. 3-E-2, PAGE OF
 SYSTEM Safety Injection System
 TAG NUMBERS 03JSIB ZT 0658
 REPRODUCED FROM Instrument Index
 DCN'S N.A.
 FCR'S N.A.

PFR-082
pg. 10

REPORT DATE: 7/29/82

SYSTEM / SEQUENCE

ANPP
INSTRUMENT INDEX:Attachment to
2426-PFR-082

DWG NO:

PAGE: 1705
13-J-221-001
REV: 13

INSTRUMENT NUMBER	SERVICE DESCRIPTION	LOGIC DIAG	LOOP DWG	PURCHASE ORDER NO	DATA SHEET	INST. INCA- TION	DISCH CLASS	INSTALL DETAIL	VENDOR INSTRUMENT NUMBER	ELECT. SCHEM. DIAG.						
02JSIAZT 0678	S/D CLG HE ISOL TRAIN A	NA	VP	N-001	VP	SIF207	01E	NA	ZT678	SIB033EL	NA	QF1				
03JSIAZT 0678	S/D CLG HE ISOL TRAIN A	NA	VP	N-001	VP	SIF207	01E	NA	ZT678	SIB033EL	NA					
01JSIBHS 0679	S/D CLG HE ISOL TRAIN B	NA	NA	J-200	NA	ZJF009	01E	NA		SIB033EL	RMBB02					
02JSIBHS 0679	S/D CLG HE ISOL TRAIN B	NA	NA	J-200	NA	ZJF009	01E	NA		SIB033EL	RMBB02	QF1				
03JSIBHS 0679	S/D CLG HE ISOL TRAIN B	NA	NA	J-200	NA	ZJF009	01E	NA		SIB033EL	RMBB02	QF1				
01JSIBHV 0679	S/D CLG HE ISOL TRAIN B	NA	NA	N-001	VP	SIF208	01B	NA		SIB033EM	NA	N	QF1			
02JSIBHV 0679	S/D CLG HE ISOL TRAIN B	NA	NA	N-001	VP	SIF208	01B	NA		SIB033EM	NA	N	QF1			
03JSIBHV 0679	S/D CLG HE ISOL TRAIN B	NA	NA	N-001	VP	SIF208	01B	NA		SIB033EM	NA	N	QF1			
01JSIBZI 0679	S/D CLG HE ISOL TRAIN B	NA	VP	J-200	NA	ZJF009	01E	NA	ZI679	SIB033EL	RMBB07	QF1				
02JSIBZI 0679	S/D CLG HE ISOL TRAIN B	NA	VP	J-200	NA	ZJF009	01E	NA	ZI679	SIB033EL	RMBB07	QF1				
03JSIBZI 0679	S/D CLG HE ISOL TRAIN B	NA	VP	J-200	NA	ZJF009	01E	NA	ZI679	SIB033EL	RMBB07	QF1				
01JSIBZT 0679	S/D CLG HE ISOL TRAIN B	NA	VP	N-001	VP	SIF208	01E	NA	ZT679	SIB033EL	NA		QF1			
02JSIBZT 0679	S/D CLG HE ISOL TRAIN B	NA	VP	N-001	VP	SIF208	01E	NA	ZT679	SIB033EL	NA		QF1			
03JSIBZT 0679	S/D CLG HE ISOL TRAIN B	NA	VP	N-001	VP	SIF208	01E	NA	ZT679	SIB033EL	NA		QF1			
01JSIBHS 0680	SPRAY CHEM PP B DSCH TO CS PP	NA	NA	J-200	NA	ZJF009	01E	NA		SIB037EL	RMBB02	QF1				
02JSIBHS 0680	SPRAY CHEM PP B DSCH TO CS PP	NA	NA	J-200	NA	ZJF009	01E	NA								
03JSIBHS 0680	SPRAY CHEM PP B DSCH TO CS PP	NA	NA	J-200	NA	ZJF009	01E	NA								
01JSIBUV 0680	SPRAY CHEM PP B DSCH TO CS PP	NA	NA	N-001	VP	SIF214	01B	NA								
02JSIBUV 0680	SPRAY CHEM PP B DSCH TO CS PP	NA	NA	N-001	VP	SIF214	01B	NA								
03JSIBUV 0680	SPRAY CHEM PP B DSCH TO CS PP	NA	NA	N-001	VP	SIF214	01B	NA								
01JSIAHS 0681	SPRAY CHEM PP A DSCH TO CS PP	NA	NA	J-200	NA	ZJF009	01E	NA								
02JSIAHS 0681	SPRAY CHEM PP A DSCH TO CS PP	NA	NA	J-200	NA	ZJF009	01E	NA								
03JSIAHS 0681	SPRAY CHEM PP A DSCH TO CS PP	NA	NA	J-200	NA	ZJF009	01E	NA								
01JSIAUV 0681	SPRAY CHEM PP A DSCH TO CS PP	NA	NA	N-001	VP	SIF214	01B	NA		SIB037ES	NA	N	QF1			

PACKAGE NO. 3-E-2, PAGE OF
SYSTEM Safety Injection System
TAG NUMBERS 03JSIBZT 0679
REPRODUCED FROM Instrument Index
DCN'S N.A.
FCR'S N.A.

PFR-082
Pg. 11

POTENTIAL FINDING REPORT
PVNGS QUALITY ASSURANCE VERIFICATION

PFR NO. 2426-PFR-083 REVISION C

A. PREPARATION BY GA INITIATOR

AFFECTED ITEMS:

- a. Motor operated valve 2J-SIB-HV696
- b. Valve 1P-SIB-V827
- c. Containment Spray Pump 2M-SIB-PO3

- d. Valve 1P-AFB-V080
- e. Valve 1P-AFB-V082
- g. Valve 1P-AFB-V138
- h. Valve 2P-AFB-V080
- i. Valve 2P-AFB-V082

f. Deleted per
Rev. C fgs
10/13

REQUIREMENT REFERENCE DOCUMENTS:

see page 1A

BASIC REQUIREMENT:

The information match design document information.

DESCRIPTION OF POTENTIAL FINDING:

Tag information does not match the information on the design documents. For specific items see page 1A.

(See attachments 1 - 7)*

*. In Rev. B attached

PREPARED BY:

Peter R...

DATE: 10/02/82

USE THE SPACE BELOW TO DOCUMENT ANY RE-REVIEW ACTION TAKEN BY INITIATOR ON THIS PFR.

SIGNATURE: _____

DATE: _____

PREPARED BY GA INITIATOR/TASK LEADER

PAGE NO. 1A

Requirement Reference Documents

- a. 13-M-SIP-001, Rev. 7
- b. Code data report sheet
- c. Code data report sheet, 13-M-SIP-001, Rev. 7.
- d. 13-AFP-001, Rev. 10 Computer Data Base "Valve Req't Master file Inquiry" (Rev. B)
- e. 13-AFP-001, Rev. 10, Computer data base "Valve Req't Masterfile Inquiry"
- f. Deleted, Rev. C
- g. 13-M-AFP-001, Rev. 10
01-P-ZZG-015, Rev. 6
- h. See (d)
- i. See (d)

Description of Potential Finding

- a. Field tag is 2J-SIA-HV696 Documents show 2J-SIB-HV696.
- b. Field serial number is H675AAE and pump number is 1"-7150W-1XMB3-NO054
Code data report serial number is H544 AAE and Pump number is 1"-7150W-1-XM2-NO054.

- c. Bechtel Tag Numer is 2M-SIB-TO3; Documents show 2M-SIB-FO3. (This item changed per Rev. C).

- d. Field Tag is 1P-AFE-VO80.
Documents show ~~1P-AF-VO80~~ 1P-AFB-VO80

- e. Field tag is 1P-AFE-VO82
Documents show 1P-AFB-VO82.

Field serial number is H625AAC
Documents show H625AAO

- f. Deleted, per Rev. C.

- g. Field Tag is 1P-AFN-V138
Documents show 1P-AFB-V138.

- h. Field Tag is 2P-AFE-VO80
Documents show 2P-AFB-VO80.

- i. Field Tag is 2P-AFE-VO82
Documents show 2P-AFB-VO82.

R.D. Phelps 10-13-82

B. REVIEW BY GA TASK LEADER

PFR NO. 2426-PFR - 083

REVISION C☐ REQUEST RE-REVIEW

BY: _____ DATE: _____

REASONS:

☒ AGREE PF IS VALID/~~INVALID~~☐ DISAGREE WITH INITIATORBY: F. Soper DATE: 10/13/82

BY: _____ DATE: _____

REASONS:

Revision C deletes Items C (partial) and F of Rev. B of this PFR. These have been invalidated based on additional information provided by APS in response to this PFR.

C., D. SEE ATTACHED SECTIONS C AND D (PAGE 3)

E. RECOMMENDATION BY FINDINGS REVIEW COMMITTEE

ADDITIONAL INFORMATION REQUIRED

DEFINITION: ☒ ADEQUATE ☐ INADEQUATEVALIDITY: ☒ VALID ☐ INVALIDCLASSIFICATION: ☐ OBSERVATION ☒ FINDING

JUSTIFICATION

CLASSIFICATION CRITERION NO. RESULTING IN "FINDING" 3+5

COMMENT ON "OBSERVATION" OR "FINDING" CLASSIFICATION:

Multiple discrepancies between tagout documents could cause maintenance or local operating errors which could lead to substantial safety hazard.

BY: S. A. Kouz DATE: 10/13/82

BY: _____ DATE: _____

F. GA PROJECT MANAGER

☒ ACCEPT☐ REJECTBY: MA Soper DATE: 10-13-82

POTENTIAL FINDING REPORT
PVNGS QUALITY ASSURANCE VERIFICATION

pg. 3

PFR NO. 2426-PFR -083 REVISION B

A. PREPARATION BY GA INITIATOR.

AFFECTED ITEMS:

- | | | |
|--------------------------------------|----------------------|----------|
| a. Motor operated valve 2J-SIB-HV696 | d. Valve 1P-AFB-V080 | |
| b. Valve 1P-SIE-V827 | e. Valve 1P-AFB-V082 | |
| c. Containment Spray Pump 2M-SIB-PO3 | g. Valve 1P-AFB-V138 | (Rev. B) |
| | h. Valve 2P-AFB-V080 | (Rev. B) |
| | i. Valve 2P-AFB-V082 | (Rev. B) |

REQUIREMENT REFERENCE DOCUMENTS:

See page ^{3A}~~1A~~

BASIC REQUIREMENT:

The information match design document information.

DESCRIPTION OF POTENTIAL FINDING:

Tag information does not match the information on the design documents. For specific items see page 1A.

(See attachments 1 - 7)

PREPARED BY: P. Rasmusson

P. Rasmusson

DATE: 9/21/02

USE THE SPACE BELOW TO DOCUMENT ANY RE-REVIEW ACTION TAKEN BY INITIATOR ON THIS PFR.

SIGNATURE: _____ DATE: _____

PREPARED BY GA INITIATOR/TASK LEADER

PAGE NO. 3A

Requirement Reference Documents

- a. 13-M-SIP-001, Rev. 7
- b. Code data report sheet.
- c. Code data report sheet, 13-M-SIP-001, Rev. 7.
- d. 13-AFP-001, Rev. 10. Computer Data Base "Valve Req't Masterfile Inquiry".
(Rev. B)
- e. 13-AFP-001, Rev. 10, Computer data base "Valve Req't Masterfile Inquiry".
- f. Computer data base, 01-P-ZZG-015, Rev. 6.
- g. 13-M-AFP-001, Rev. 10 (Rev. B)
01-P-ZZG-015, Rev. 6
- h. See (d) (Rev. B)
- i. See (d) (Rev. B)

Description of Potential Finding

- a. Field tag is 2J-SIA-HV696 Documents show 2J-SIB-HV696.
- b. Field serial number is H675AAE and pump number is 1"-715OW-LXMB3-NC054
Code data report serial number is H544 AAE and Pump number is
1"-715OW-1-XMB2-NC054
- c. Field code tag serial number is 087643. National Board Number is 410.
Bechtel Tag Number is 2M-SIB-TO3.

Code Data Report Serial Number is 087642. National Board Number is 409.
Bechtel Tag Number is 2M-SIB-PQ3.
- d. Field tag is 1P-AFE-V080.
Documents show 1P-AFB-V080.
- e. Field tag is 1P-AFE-V082.
Documents show 1P-AFB-V082.

Field serial number is H625AAC
Documents show H625AAO
- f. For valve 1P-AFB-V080 there is a discrepancy between the computer data base
and the valve designation list 01-P-ZZG, Rev. 6. The computer base gives
1P-AFB-V080 and the valve designation list gives 1P-AFE-V080.
- g. Field Tag is 1P-AFN-V138 (Rev. B)
Documents show 1P-AFB-V138
- h. Field Tag is 2P-AFE-V080 (Rev. B)
Documents show 2P-AFB-V080
- i. Field Tag is 2P-AFE-V082 (Rev. B)
Documents show 2P-AFB-V082

B. REVIEW BY GA TASK LEADER

PFR NO. 2426-PFR

- 083

REVISION

B

☐ REQUEST RE-REVIEW

REASONS:

BY: _____

DATE: _____

☒ AGREE PF IS VALID/~~INVALID~~

☐ DISAGREE WITH INITIATOR

REASONS:

BY: F. Soper

DATE: 9/21/82

BY: _____

DATE: _____

C., D. SEE ATTACHED SECTIONS C AND D (PAGE 3)

E. RECOMMENDATION BY FINDINGS REVIEW COMMITTEE

ADDITIONAL INFORMATION REQUIRED

DEFINITION:

☐ ADEQUATE

☐ INADEQUATE

VALIDITY:

☐ VALID

☐ INVALID

CLASSIFICATION:

☐ OBSERVATION

☐ FINDING

JUSTIFICATION

CLASSIFICATION CRITERION NO. RESULTING IN "FINDING" _____

COMMENT ON "OBSERVATION" OR "FINDING" CLASSIFICATION:

BY: _____

DATE: _____

BY: _____

DATE: _____

F. GA PROJECT MANAGER

☐ ACCEPT

☐ REJECT

BY: _____

DATE: _____

C. REVIEW BY ORIGINAL DESIGN ORGANIZATION

PFR NO. 083 , pg. 5 REVISION B☐ AGREE ☒ DISAGREE THAT POTENTIAL FINDING IS ACCURATEBY: [Signature] DATE: 10-5-82

IF THE "DISAGREE" BLOCK WAS CHECKED, USE THE SPACE BELOW TO PROVIDE INFORMATION THAT WOULD IMPROVE ACCURACY OR DEFINITION. (USE BACK FOR ADDITIONAL SPACE.)

- a. Agree. NCR PX 4713 documents mistagged valve.
- b. Agree. NCR PX 4713 documents that the wrong Code Data Report was attached to the CIP.
- c. Disagree. The field tags match the Code Data Report. However, the BPC ID tag reads 2-M-SIB-T03 and should be P03. NCR NA-910 documents the mistagged pump.
- d. Agree. NCR PX 4713 documents the mistagged valve.
- e. Agree NCR PX 4713 documents the mistagged valve and the incorrect Valve Designation List entry.
- f. Disagree. The computer base is the most current edition of the Valve Designation List. If it is correct, no Finding exists.
- g, h, i. Agree. NCR PX 4713 documents the mistagged valve.

D. REVIEW BY GA INITIATOR

☒ AGREE PF IS INVALID
FOR ITEMS C. & F. ONLYREASON: See next page... (Page 4)BY: R.D. Phelps DATE: 10-12-82

REVIEW BY GA TASK LEADER

☐ AGREE PF IS INVALIDREASON: Concur with recommendation to invalidate Items C & F only. Revise PFR to retain valid items.BY: [Signature] DATE: 10/13/82

Item 'c' of PFR-083, Revision B, relating to incorrect code tags, is invalid. The reference document used by the walkdown team had been extracted from a construction package issued thru the Bechtel site document control organization, from their Unit 1 vault files. The document given to TPT was for the 'A' train containment spray pump rather than the 'B' pump. APS has provided a copy of the correct 'B' train pump. It is attached to this 'B' Revision of PFR-083.

Item 'f' of PFR-083 pertains to differences between the computer data base for Valve data, versus the hard copy of that same data base. The computer data base is maintained current, so what is there is deemed to be 'Official' by Bechtel. The hard copy, plus its numerous revisions is kept by Bechtel and is revised in toto periodically by Bechtel. APS' statement that the computer data base is official, & therefore what's there is correct, results in the invalidation of Item 'f'.

STATUS: AA

VENDOR: HCG

PALO VERDE NUCLEAR GENERATING STATION



NONCONFORMANCE REPORT

NO. NA910

PAGE 1 OF 1

1. UNIT 2	2. MO DAY YR 10 | 9 | 82	3. DRAWING/PART NO. N001-15.02-11-4	REV.	4. ITEM DESCRIPTION CONTAINMENT SPRAY PUMP "B"	5. ITEM LOCATION Auxiliary Bldg. 40 EL
6. Q CLASS Q	7. STARTUP SYSTEM NO. SI-08	8. SERIAL NO. 087643	9. SUBCONTRACTOR/SUPPLIER/BECHTEL Combustion Engineering	10. P.O. OR SPEC NO. N001	11. ASME AUTHORIZED INSPECTION REQ'D. <input type="checkbox"/> YES <input checked="" type="checkbox"/> NO
12. DESCRIPTION LIST IN ORDER: NO. PCS., DWG/SPEC REQMT., PRESENT CONDITION	16. FIELD ENGR DECISION	17. <input type="checkbox"/> FIELD RECOMMENDED DISPOSITION <input type="checkbox"/> ENGINEER CONCURRENCE REQ'D. <input type="checkbox"/> ENGINEER DISPOSITION REQ'D.			
1. POTENTIAL FINDING REPORT #2426					
PFR - 083 IDENTIFIED PLANT					
TAG FOR CONTAINMENT SPRAY PUMP					
2M-SIB-P03 TO BE IN					
ERROR, 2M-SIB-T03 STAMPED					
INSTEAD OF 2M-SIB-P03					
(REF. TORREY PINES AUDIT)					
13. REPORTED BY: D. WITAS	15. INSPECTION/VALIDATION/REVIEW DATE (Signature) 10/4/82				
19. ACCEPTANCE OF REWORK/REPAIR <input type="checkbox"/> QC ENGR _____ DATE _____ <input type="checkbox"/> FIELD ENGR _____ DATE _____		15A. REPORTABILITY EVALUATION: NOT REPORTABLE: <input type="checkbox"/> OR DER NO. _____			
14. ASSUMED CAUSE OF DISCREPANCY UNKNOWN		18. DISPOSITION CONCURRENCE PROJ FIELD ENGR _____ DATE _____ GROUP SUPV _____ DATE _____ AUTHORIZED INSPECTOR _____ DATE _____			
INITIATOR (Signature) DATE 10-9-82		15A. REVIEWERS: R/E _____ QA (Signature) _____ DATE 10/4/82			
		NUCLEAR GROUP SUPV (IF REQUIRED) DATE _____ PROJ ENGR _____ DATE _____ QA ENGR _____ DATE _____			

STATUS: AAVENDOR: HBA

PALO VERDE NUCLEAR GENERATING STATION



NONCONFORMANCE REPORT

NO. FX-4713PAGE 1 OF 2

1. UNIT <u>1/2</u>	2. MO DAY YR <u>10 5 82</u>	3. DRAWING/PART NO. <u>SEE BLOCK 12</u>	REV.	4. ITEM DESCRIPTION <u>VALVES (SEE BLOCK 12)</u>	5. ITEM LOCATION <u>VARIES</u>
6. Q CLASS <u>Q1B</u>	7. STARTUP SYSTEM NO. <u>25107, IRC01, 112AFO1</u>	8. SERIAL NO. <u>SEE BLOCK 12</u>	9. SUBCONTRACTOR/SUPPLIER/BECHEL <u>BECHEL</u>		10. P.O. OR SPEC NO. <u>13PM204</u> ^{REV. 11}
11. ASME AUTHORIZED INSPECTION REQ'D. <input checked="" type="checkbox"/> YES <input type="checkbox"/> NO					
12. DESCRIPTION LIST IN ORDER: NO. PCS., DWG/SPEC REQMT., PRESENT CONDITION	16. FIELD ENGR DECISION	17. <input type="checkbox"/> FIELD RECOMMENDED DISPOSITION <input type="checkbox"/> ENGINEER CONCURRENCE REQ'D.			
a. FIELD TAG IS 2J-SIA-HV696, DOCUMENTATION FOR VALVE IS 2J-SIR-HV696 (DWG 13PSIF208)					
b. FIELD SERIAL No. FOR VALVE 1PSIEV827 IS H675AAE : NUMBER IS 1"-7150W- 1XMB3-NC054. CODE DATA REPORT SERIAL No. IS H544-AAE : NUMBER IS 1"-7150W-1-XMB2-NC054. (DWG 13PSIF208)					
13. REPORTED BY: TORREY PINES TECHNOLOGY		15. INSPECTION/VALIDATION/REVIEW DATE		18. DISPOSITION CONCURRENCE	
19. ACCEPTANCE OF REWORK/REPAIR		15A. REPORTABILITY EVALUATION:		18. DISPOSITION CONCURRENCE	
<input type="checkbox"/> QC ENGR _____ AUTHOR. INSP _____		NOT REPORTABLE: <input type="checkbox"/>		REVIEWERS:	
<input type="checkbox"/> FIELD ENGR _____ DATE _____		OR		R/E _____	
		DER NO. _____		QA _____	
				DATE _____	
14. ASSUMED CAUSE OF DISCREPANCY INDEPENDENT EVALUATION, POTENTIAL FINDING.		18. DISPOSITION CONCURRENCE			
INITIATOR <u>R.S. Rathbun</u> DATE <u>5 OCT. 82</u>		18. DISPOSITION CONCURRENCE			
		18. DISPOSITION CONCURRENCE			

CONTINUATION SHEET

PALO VERDE NUCLEAR GENERATING STATION



NONCONFORMANCE REPORT

NO. PX-4713 PAGE 2 OF 2

1. UNIT	2. MO DAY YR	3. DRAWING/PART NO.	REV	4. ITEM DESCRIPTION	5. ITEM LOCATION
1 & 2	10 | 5 | 82	SEE PAGE 1		VALVES (SEE BLOCK 12)	VARIES
ITEM	12. DESCRIPTION LIST IN ORDER: NO. PCS., DWG/SPEC REQMT., PRESENT CONDITION			16. FIELD ENGR DECISION	17. <input type="checkbox"/> FIELD RECOMMENDED DISPOSITION <input type="checkbox"/> ENGR DISPOSITION REQ'D <input type="checkbox"/> ENGINEER CONCURRENCE REQUIREMENT
d.	FIELD TAG IS 1P-AFE-V080, DOCUMENTATION FOR VALVE IS 1P-AFB-V080 (DWG 13PSGF120)				
e.	SERIAL NO. FOR VALVE 1P-AFB-V082 IS H625 AAC, DOCUMENTATION SHOWS SERIAL NO. H625-AA-O TAG 1P-AFE-V082 (DWG 13PSGF120)				
g.	FIELD TAG IS 1P-AFN-V138, DOCUMENTATION SHOWS 1P-AFB-V138 (DWG 13PAFF133)				
h.	FIELD TAG IS 2P-AFE-V080, DOCUMENTATION SHOWS 2P-AFB-V080 (DWG 13PSGF120)				
i.	FIELD TAG IS 2P-AFE-V082, DOCUMENTATION SHOWS 2P-AFB-V082 (DWG 13PSGF120)				
(IN RESPONSE TO INDEPENDENT QA EVALUATION OF PUNGS: POTENTIAL FINDING REPORT #2426-PFR-083/ISSUE P)					

FORM NPV-1 N CERTIFICATE HOLDERS' DATA REPORT FOR NUCLEAR PUMPS OR VALVES*
As Required by the Provisions of the ASME Code, Section III, Div. 1

PFR-083,
pg. 10

R531(11)

MR NO.
44930

1. Manufactured by Ingersoll-Rand Company, Cameron Pump Division, Phillipsburg, N.J.

(Name and Address of N Certificate Holder)

2. Manufactured for Combustion Engineering, Windsor, Conn.

(Name and Address of Purchaser or Owner)

3. Location of Installation Arizona Public Service, Unit #2, Palo Verde, Arizona

(Name and Address)

4. Pump or Valve Pump Nominal Inlet Size 14" Outlet Size 8"
(inch) (inch)

(a) Model No. (b) N-Certificate Holder's (c) Canadian

Series No.
or Type

Serial
No.

Registration
No.

(d) Drawing
No.

(e) Class

(f) Nat'l.
Bd. No.

(g) Year
Built

(1)	8X23WDF	087643	N/A	8X23WDF86X5B	2	410	1978
(2)							
(3)							
(4)							
(5)							
(6)							
(7)							
(8)							
(9)							
(10)							

5. Containment Spray Pump

(Brief description of service for which equipment was designed)

6. Design Conditions 710 psi 400 °F or Valve Pressure Class N/A (1)

(Pressure)

(Temperature)

7. Cold Working Pressure N/A psi at 100°F.

8. Pressure Retaining Pieces

Mark No.	Material Spec. No.	Manufacturer	Remarks
(a) Castings			
N/A			
(b) Forgings			
Casing	SA182F304	Cameron Iron Wrks	S/N 79770
St. Box Ext.	SA182F304	McInnes Steel	S/N 91143

(1) For manually operated valves only.

* Supplemental sheets in form of lists, sketches or drawings may be used provided (1) size is 8-1/2" x 11", (2) information in items 1, 2 and 5 on this Data Report is included on each sheet, and (3) each sheet is numbered and number of sheets is recorded at top of this form.

2ms16P28

Mark No.	Material Spec. No.	Manufacturer	Remarks
(c) Bolting			
2.00"x9.50" Studs	SA193GR.B7	Vitco Nuclear	MR 78-5810
2.00"x8.88" Studs	SA193GR.B7	Vitco Nuclear	MR 78-5811
2.00" Hex Nuts	SA194GR.2H	Vitco Nuclear	MR 78-5365
0.75"x4.50" Gland Studs	SA193GR.B8M	R.E.C. Corp.	MR 78-5165
0.75" Hex Nuts	SA194GR.8	Vitco Nuclear	MR 78-5294
(d) Other Parts			
Seal Gland Plate	SA479TP316	Durametallic Corp.	S/N 92767
Pump Feet	SA240TP304	Phoenix Steel	HT# 654035

9. Hydrostatic test 1140 psi. Disk Differential test pressure N/A psi. Hydrostatic Test 700 PSI.
(Pump) (Gland)

CERTIFICATE OF COMPLIANCE

We certify that the statements made in this report are correct and that this pump, or valve, conforms to the rules of construction of the ASME Code for Nuclear Power Plant Components, Section III, Div. I., Edition 1974.
Addenda Summer 1974 (Date), Code Case No. None Date 11/30/79

Signed Ingersoll-Rand Co., Cameron Pump Div. by H. D. Egan
(N Certificate Holder)

Our ASME Certificate of Authorization No. N-1366 to use the N symbol expires Sept. 27, 1980
(N) (Date)

CERTIFICATION OF DESIGN

Design information on file at Combustion Engineering, Windsor, CT.

Stress analysis report (Class 1 only) on file at N/A

Design specifications certified by (1) W. W. Albert

PE State CT. Reg. No. 6333

Stress analysis certified by (1) N/A

PE State N/A Reg. No. N/A

(1) Signature not required. List name only.

CERTIFICATE OF SHOP INSPECTION

I, the undersigned, holding a valid commission issued by the National Board of Boiler and Pressure Vessel Inspectors and the State or Province of PA. and employed by H. S. B. I. & I. Co. of Hartford, Conn. have inspected the pump, or valve, described in this Data Report on 11-30 19 78, and state that to the best of my knowledge and belief, the N Certificate Holder has constructed this pump, or valve, in accordance with the ASME Code, Section III.

By signing this certificate, neither the Inspector nor his employer makes any warranty, expressed or implied, concerning the equipment described in this Data Report. Furthermore, neither the Inspector nor his employer shall be liable in any manner for any personal injury or property damage or a loss of any kind arising from or connected with this inspection.

Date 11-30 19 78
W. W. Albert

1. Work done by Bechtel Power Corp
(Name and address of repair or alteration organization) 13-NM-001 PER-085 pg. 11
2. Owner Arizona Nuclear Power Project, P.O. Box 49, Palo Verde, Arizona
(Name and address of owner) (Serial No.)
3. Location of Installation Palo Verde Nuclear Generating Station, P.O. Box 49, Palo Verde, AZ.
(Name and address)
4. Unit Identification 2M-SIB-P03 Name of Manufacturer Ingersoll-Rand CO.
(Boiler, Pressure Vessel)
5. Identifying Nos. 087643 437 Arizona N/A 1979
(Mfr Serial No) (National Board No) (Jurisdiction) (Other) (Year Built)
6. Description of Work: Vendor Weld No. 1 was cut out, pipe removed at
(Use back, separate sheet, or sketch if necessary)
threaded pipe connection Y3, and replaced with: 0'-3" long, 1/2" Ø
sch 80 S.S. seal piping, SA-312 Gr. T.Y. 304L, New weld No. FW-NC024,
as per NCR# N/A-391

7. Remarks: Attached are Manufacturer's Partial Data Reports properly identified and signed by Commissioned Inspectors for the following items of this report: N/A
Pressure Test, if Applied psi

Copy
original attached to NF-1 in
PIP Pkg. Jt 12-23-81

(Name of part, item number, mfr's name and identifying stamp)

CERTIFICATE OF COMPLIANCE

We certify that the statements made in this report are correct and that all design
material, construction, and workmanship on this Repair conform to
The National Board Inspection Code. ASME SECTION III
Date 11-5-81 Signed Bechtel Power Corp by Amil A. Kouscous
(Repair, Alteration Organization) (Authorized Representative)

Our Certificate of Authorization No. N/A to use the N/A Symbol expires N/A, 19

CERTIFICATE OF INSPECTION

I, the undersigned, holding a valid commission issued by The National Board of Boiler and Pressure Vessel Inspectors or the State or Province of Arizona and employed by LMCC
of Illinois have inspected
the work described in this Data Report on 10-29- 1981 and state that to the best of my knowledge and belief,
this work has been done in accordance with The National Board Inspection Code.

By signing this certificate, neither the Inspector nor his employer makes any warranty, expressed or implied, concerning the work described in this Report. Furthermore, neither the Inspector nor his employer shall be liable in any manner for any personal injury or property damage or a loss of any kind arising from or connected with this inspection, except such liability as may be provided in a policy of insurance which the Inspector's insurance company may issue upon said object and then only in accordance with the terms of said policy.
Date Nov. 5, 1981 Robert C. Roberts Commissions Arizona 124
Natl Board State Province and No

111-21 01024A
015101 012

VALVE DESIGNATION LIST
BY SYS/SEQ/SAFETY/UNIT
VALVE DESIGNATION LIST UNIT 1 AND COMMON

DATE 3/04/82
PAGE 12

UNIT: A-1 SYSTEM: - P.O.: - VENDOR NAME: -
P&ID: - SURPLUS VALVE: - DISCIPLINE: N

TAG NUMBER	SIZE	MARK NO	SYSTEM ENG S/U	PROJ CLS	RELEASE TO SHIP NO	ENV CDE	MATL CLS	LINE NO	AREA NO	PIPING DWG NUMBER	P & ID DRAWING NUMBER	CRD RV	SERIAL NUMBER
------------	------	---------	----------------	----------	--------------------	---------	----------	---------	---------	-------------------	-----------------------	--------	---------------

VENDOR DATA LOG NUMBER	DESIGN PRES	TEMP	OPERATION PRES	TEMP	BECHTEL SPEC/PO	P.O. ITEM REV	RECD SITE	VEND PROM AT SITE	REQSTN CD DATE	INSTALL CD DATE	REL TO S/U CD DATE
------------------------	-------------	------	----------------	------	-----------------	---------------	-----------	-------------------	----------------	-----------------	--------------------

CODE ACCOUNT	SURPLUS VALVE	ATTACH	VENDOR NAME	VEND SHP ORD	REMARK
--------------	---------------	--------	-------------	--------------	--------

1PAFBV129	.50	329	1AFO1	01B	009-002	XX	DCBA	006	ZCAA	13PAFF133	13MAFP001 E01		
P221C-64			1675	0120	1425	0075	13PM221C	021			I-260181	C-240281	

N/A KEROTEST FROM DCP

1PAFBV130	.50	329	1AFO1	01B	009-002	XX	DCBA	006	ZCAA	13PAFF133	13MAFP001 E01		
P221C-64			1675	0120	1425	0075	13PM221C	021			I-260181	C-240281	

N/A KEROTEST FROM DCP

1PAFAV131	3.45	N/	1AFO3				AE1	0058	500	575	FF131	AFPO01070 7P2 21	
A-302-141 13PA													
006 1AFO3													

A01C

1PAFNV131	1.00	345	1AFO3	SUR	021E-006	XX	DBC	030	ZCAA	13PAFF131	13MAFP001 G07 07		
P221A-141			1390	0585	1250	0575	13PM221A	141			I-291281	C-291281	

N/A DRESSER

1PAFAV132	1.00	378	1AFO3	01C			HBCB	013					
01			0005	0230	0005	0230	13PM221C0						
003							KEROTEST				6M086		

1PAFNV133	6.00	350	1AF71	R2D			DCDA	061					
01			1600	0120	1425	0075	13PM222B						

PACIFIC

1PAFNV134	6.00	075	1AF71	R2D			DCDA	061					
01			1600	0120	1425	0075	13PM222B						

PACIFIC

1PAFNV135	.50	328	1AF71	R2D			DCDA	061					
01			1600	0120	1425	0075	13PM222A						

CONVAL

M127

1PAFNV136	.50	328	1AF71	R2D			DCDA	061					
01			1600	0120	1425	0075	13PM222A						

CONVAL

M127

1PAFAV137	6.00	592	1AFO3	01C	017-001	XX	DCCA	009	ZCAA	13PAFF132	13MAFP001	OR	
P221B-302-103			1675	0120	1425	0075	13PM221B	054			I-291281	C-291281	

N/A ANCHOR/DARLING 2M294

1PAFBV138	6.00	592	1AFO1	01C	017-001A	XX	DCCA	011		13PAFF133	13MAFP001 C05 OR		
P221B-302-103			1675	0120	1425	0075	13PM221B	054					

N/A ANCHOR/DARLING 2M294

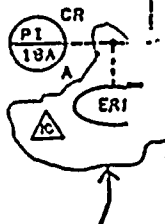
TORREY PINES TECHNOLOGY
ARIZONA PUBLIC SERVICE-PVNGS

PACKAGE NO. 1-M2, PAGE OF
SYSTEM AUXILIARY FEEDWATER
TAG NUMBERS 1PAFBV129, 1PAFBV130, 1PAFNV138
REPRODUCED FROM 01-P-736-015, REV. 6
DCN'S NONE
FCR'S NONE

CV0002 11179

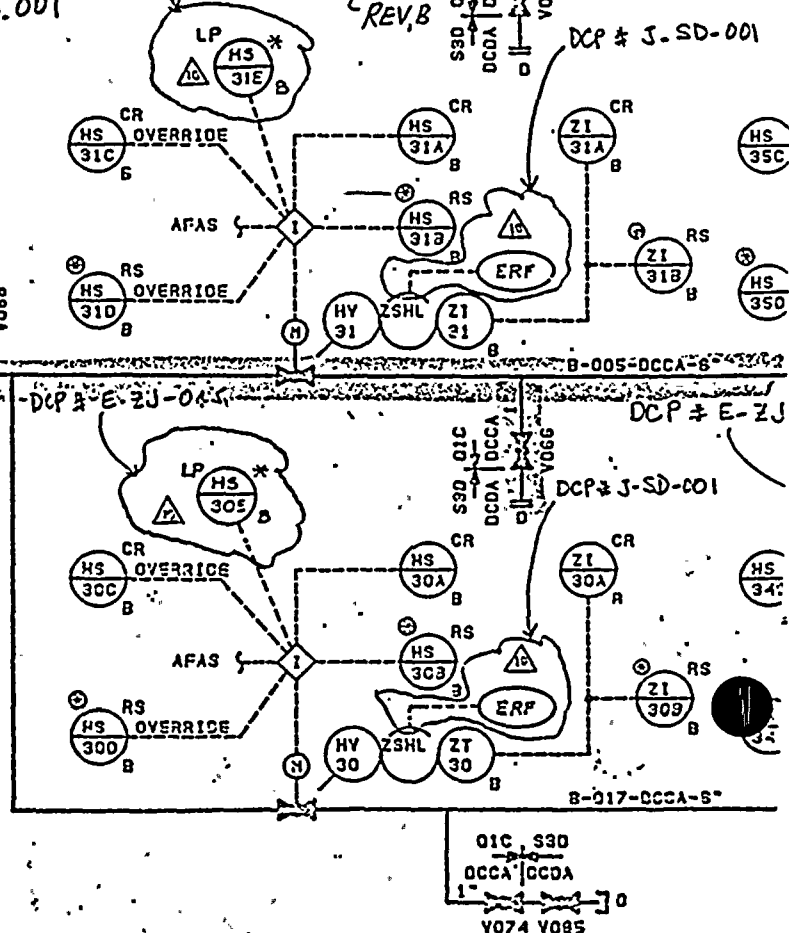
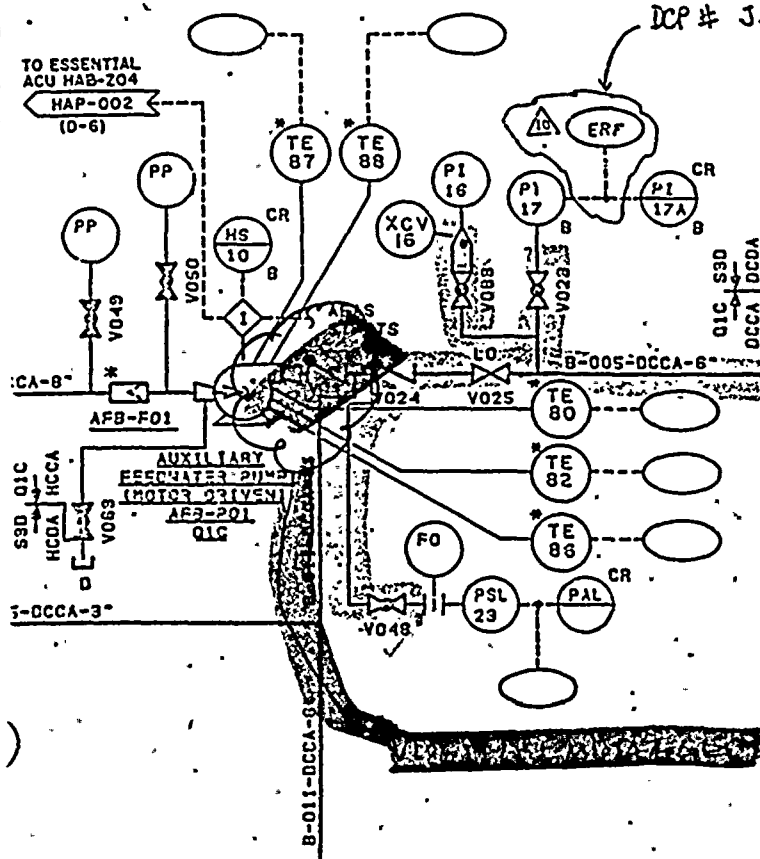
CORRECT TAG NUMBER

ATTACHMENT 7
2426-PFL-083
Rev. B, p.12
(PART 9)
Page 28 of 28



PAGE 3 OF 28
ATTACHMENT 7
(NOTE 1)
24 LG - PFL - 083, PJ 13
24 LG - E - J. 045
PART 6

TO ESSENTIAL
ACU HAB-ZO4
HAP-002
(D-6)

[illegible]

PACKAGE NO. 1-M2, PAGE OF
SYSTEM AUXILIARY FEEDWATER
TAG NUMBERS SEE FORM 3
REPRODUCED FROM 13-M-AFP-001, REV. 13
DCN'S NONE 10
FCR'S NONE

TORREY PINES TECHNOLOGY
ARIZONA PUBLIC SERVICE—PVNGS

ATTACHMENT 5

1426 - P. 083 - B

PART (E)

DRO18B

VALVE REQUIREMENT MASTERFILE INQUIRY

08/31/82

TAG NUMBER _____ AREA NO _____ P 10 DRAWING NO _____ SYSTEM PIPING DWG LINE MARK MATL NO _____ CRD RV ENG S/U NUMBER _____ REV NO _____ NO CLS _____ SIZE _____

BECHTEL SPEC/PO 13PM221A CODE OF ACCOUNT ATTACH N/A VENDOR DATA LOG NUMBER P221A-302-63 PLAN CODE SERIAL NUMBER

INSTALL REL S/U CD DATE CD DATE CD DATE CD DATE REQ DT CD CLS CD CLS ITEM RV INCD 1 111281 R 111281 Y 01B 124 Y

DESIGN PRES TEMP 1675-0120 OPERATING PRES TEMP 1425-0075 VENDOR SHOP ORDER NO. SURPLUS VALVE NO MANUFACTURER NAME REL TO SHIP /CPOR 006E024

VENDOR NAME DRESSER REMARK

CMD1=MASTER MENU CMD2=PREVIOUS PROMPT ROLLKEYS ACTIVE

TORREY PINES TECHNOLOGY ARIZONA PUBLIC SERVICE - PVNGS

PACKAGE NO. 1-M-3, PAGE 11 OF 13
SYSTEM Auxiliary FEED WATER
TAG NUMBERS 1PNEBV087
REPRODUCED FROM 12-P-226-015
DCN'S NONE
FCR'S NONE

PFE-083
pg 15

1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31 32 33 34 35 36 37 38 39 40 41 42 43 44 45 46 47 48 49 50 51 52 53 54 55 56 57 58 59 60 61 62 63 64 65 66 67 68 69 70 71 72 73 74 75 76 77 78 79 80 81 82 83 84 85 86 87 88 89 90 91 92 93 94 95 96 97 98 99 100 101 102 103 104 105 106 107 108 109 110 111 112 113 114 115 116 117 118 119 120 121 122 123 124 125 126 127 128 129 130 131 132 133 134 135 136 137 138 139 140 141 142 143 144 145 146 147 148 149 150 151 152 153 154 155 156 157 158 159 160 161 162 163 164 165 166 167 168 169 170 171 172 173 174 175 176 177 178 179 180 181 182 183 184 185 186 187 188 189 190 191 192 193 194 195 196 197 198 199 200 201 202 203 204 205 206 207 208 209 210 211 212 213 214 215 216 217 218 219 220 221 222 223 224 225 226 227 228 229 230 231 232 233 234 235 236 237 238 239 240 241 242 243 244 245 246 247 248 249 250 251 252 253 254 255 256 257 258 259 260 261 262 263 264 265 266 267 268 269 270 271 272 273 274 275 276 277 278 279 280 281 282 283 284 285 286 287 288 289 290 291 292 293 294 295 296 297 298 299 300 301 302 303 304 305 306 307 308 309 310 311 312 313 314 315 316 317 318 319 320 321 322 323 324 325 326 327 328 329 330 331 332 333 334 335 336 337 338 339 340 341 342 343 344 345 346 347 348 349 350 351 352 353 354 355 356 357 358 359 360 361 362 363 364 365 366 367 368 369 370 371 372 373 374 375 376 377 378 379 380 381 382 383 384 385 386 387 388 389 390 391 392 393 394 395 396 397 398 399 400 401 402 403 404 405 406 407 408 409 410 411 412 413 414 415 416 417 418 419 420 421 422 423 424 425 426 427 428 429 430 431 432 433 434 435 436 437 438 439 440 441 442 443 444 445 446 447 448 449 450 451 452 453 454 455 456 457 458 459 460 461 462 463 464 465 466 467 468 469 470 471 472 473 474 475 476 477 478 479 480 481 482 483 484 485 486 487 488 489 490 491 492 493 494 495 496 497 498 499 500 501 502 503 504 505 506 507 508 509 510 511 512 513 514 515 516 517 518 519 520 521 522 523 524 525 526 527 528 529 530 531 532 533 534 535 536 537 538 539 540 541 542 543 544 545 546 547 548 549 550 551 552 553 554 555 556 557 558 559 560 561 562 563 564 565 566 567 568 569 570 571 572 573 574 575 576 577 578 579 580 581 582 583 584 585 586 587 588 589 590 591 592 593 594 595 596 597 598 599 600 601 602 603 604 605 606 607 608 609 610 611 612 613 614 615 616 617 618 619 620 621 622 623 624 625 626 627 628 629 630 631 632 633 634 635 636 637 638 639 640 641 642 643 644 645 646 647 648 649 650 651 652 653 654 655 656 657 658 659 660 661 662 663 664 665 666 667 668 669 670 671 672 673 674 675 676 677 678 679 680 681 682 683 684 685 686 687 688 689 690 691 692 693 694 695 696 697 698 699 700 701 702 703 704 705 706 707 708 709 710 711 712 713 714 715 716 717 718 719 720 721 722 723 724 725 726 727 728 729 730 731 732 733 734 735 736 737 738 739 740 741 742 743 744 745 746 747 748 749 750 751 752 753 754 755 756 757 758 759 760 761 762 763 764 765 766 767 768 769 770 771 772 773 774 775 776 777 778 779 780 781 782 783 784 785 786 787 788 789 790 791 792 793 794 795 796 797 798 799 800 801 802 803 804 805 806 807 808 809 810 811 812 813 814 815 816 817 818 819 820 821 822 823 824 825 826 827 828 829 830 831 832 833 834 835 836 837 838 839 840 841 842 843 844 845 846 847 848 849 850 851 852 853 854 855 856 857 858 859 860 861 862 863 864 865 866 867 868 869 870 871 872 873 874 875 876 877 878 879 880 881 882 883 884 885 886 887 888 889 890 891 892 893 894 895 896 897 898 899 900 901 902 903 904 905 906 907 908 909 910 911 912 913 914 915 916 917 918 919 920 921 922 923 924 925 926 927 928 929 930 931 932 933 934 935 936 937 938 939 940 941 942 943 944 945 946 947 948 949 950 951 952 953 954 955 956 957 958 959 960 961 962 963 964 965 966 967 968 969 970 971 972 973 974 975 976 977 978 979 980 981 982 983 984 985 986 987 988 989 990 991 992 993 994 995 996 997 998 999 1000 1001 1002 1003 1004 1005 1006 1007 1008 1009 1010 1011 1012 1013 1014 1015 1016 1017 1018 1019 1020 1021 1022 1023 1024 1025 1026 1027 1028 1029 1030 1031 1032 1033 1034 1035 1036 1037 1038 1039 1040 1

DRQ18B

VALVE REQUIREMENT MASTERFILE INQUIRY

08/31/82

TAG	AREA	P & ID DRAWING	SYSTEM	PIPING DWG	LINE	MARK	MATL	
NUMBER	NO	NUMBER	CRD	RV	ENG	S/U	NUMBER	REV. NO.
1PACRV080	ZCAA	13MAIF001	001	01	1AIG1	1PACRV120	001	001

BECHTEL	CODE OF	VENDOR DATA	PLAN	
SPEC/PO	ACCOUNT	ATTACH	LOG NUMBER	CODE
				SERIAL NUMBER
13PM221B		N/A	P221B-302-125	

INSTALL	REL	S/U	INS	THRU	DATE	RECEIVED	CHG	PROD	PLN	P.O.	CDS
CD DATE	CD DATE	CD DATE	CD DATE	REQ DT	CD	CLS	CD	CLS	ITEM	RV	IND
I 230782	R 230782		R 230782		X	018	0	0	005		Y

DESIGN	OPERATING	VENDOR SHOP	SURPLUS	MANUFACTURER	REL TO SHIP
PRES TEMP	PRES TEMP	ORDER NO.	VALVE NO	NAME	REPOR
1675-0120	1425-0075	2M294			013E005

VENDOR NAME	REMARK
ANCHOR/DARLING	

CMD1=MASTER MENU CMD2=PREVIOUS PROMPT: ROLLKEYS ACTIVE

TORREY PINES TECHNOLOGY
ARIZONA PUBLIC SERVICE--PVNGS

PACKAGE NO. 1-M3, PAGE 10 OF 13
SYSTEM AUXILIARY FEEDWATER
TAG NUMBERS 1PAFBV080
REPRODUCED FROM 01-P-226-015
DEN'S NONE
FCR'S NONE

PF#A-083.
Pg. 16

DR018B

VALVE REQUIREMENT MASTERFILE INQUIRY

09/31/82

TAG NUMBER 2FAFEV080 AREA NO 13MAF P S 11 DRAWING NO 13MAF SYSTEM PIPING DWG NO 13MAF LINE MARK MATL NO 13MAF CLS NO 13MAF SIZE 13MAF

BECHTEL SPEC/PO 13PM221B CODE OF ACCOUNT N/A ATTACH P221B-125 VENDOR DATA 13MAF PLAN CODE 13MAF

INSTALL REL S/U CD DATE CD DATE CD DATE CD DATE REQ DT CD CLS CD CLS ITEM RV IND 01B 055

DESIGN OPERATING VENDOR SHOP SURPLUS MANUFACTURER REL TO SHIP PRES TEMP PRES TEMP ORDER NO VALVE NO NAME /CPOR 013E003

VENDOR NAME REMARK ANCHOR/DARLING

CMD1=MASTER MENU CMD2=PREVIOUS PROMPT ROLLKEYS ACTIVE

TORREY PINES TECHNOLOGY ARIZONA PUBLIC SERVICE-PVNGS

PACKAGE NO.	2-113	PAGE	11	OF	14
SYSTEM	AUXILIARY FEEDWATER				
TAG NUMBERS	2FAFEV080				
REPRODUCED FROM	02-P-226-015				
DCN'S	None				
FCR'S	None				

Pg. 18 PFR-083

Attachment 7
0426- PFR- 083-B

PART (I)

2PAFEV082
FEED
TK6

DR018B

VALVE REQUIREMENT MASTERFILE INQUIRY

08/31/82

TAG NUMBER	AREA NO.	P % TO DRAWING NUMBER	SYSTEM CRD RV	ENGINE S/U	LINE NUMBER	MARK REV.	MATL NO	CLS ST/F
2PAFEV082	ZCAA	13MA/P001	001 07		13PM221A	000	027	USBA
BECHTEL SPEC/P0	CODE OF ACCESS	VENDOR DATA		PLAN		SERIAL NUMBER		
13PM221A		N/A	P221A-63					

INSTALL CD DATE	REL S/U CD DATE	ITEM NO CD DATE	VALVE NO CD DATE	REQUIRE REQ DT	ENV CD	CLS CLS	CD CLS	ITEM RV INU 010
I 060782	C 060782		C 060782		X	01B		

DESIGN PRES TEMP	OPERATING PRES TEMP	VENDOR SHOP ORDER NO.	SURPLUS VALVE NO	MANUFACTURER NAME	REL TO SHIP /CPOR
1675-0120	1425-0075				011E03H

VENDOR NAME: DRESSER
REMARK:

CMD1=MASTER MENU CMD2=PREVIOUS PROMPT ROLLKEYS ACTIVE

TORREY PINES TECHNOLOGY
ARIZONA PUBLIC SERVICE-PVNGS

PACKAGE NO.	2-M3	PAGE	12	OF	14
SYSTEM	Auxiliary FEEDWATER				
TAG NUMBERS	2PAFBV082				
REPRODUCED FROM	02-P-226-015				
DCN'S	NONE				
FCR'S	NONE				

PFR-083
Pg. 19

FROM: _____ LOCATION: _____ DATE: Attachment
TO: _____ LOCATION: _____ DATE: pg. 20

TELEPHONE COMMUNICATION RECORD

(PLEASE HAND LETTER LEGIBLY IN BLACK OR RED INK)

PFR

-083

REV. B

CALL INITIATED BY: BENHAM, PHELPS, RASMUSSEN AT GAC ☒ OTHER: _____

CALL RECEIVED BY: IDE OF APS AT GAC ☐ OTHER: _____

OTHER PARTICIPANTS: PENNICK, FORESTER, & WITTAS ALL APS

DATE: 10-12-82 TIME: 9:30A PROGRAM NAME: PVN 65 PROGRAM NUMBER: 2426

SUBJECT: DISCUSS QUESTIONS ON PFRs

SUMMARY: FIRST BENHAM DISCUSSED PFR NOS. 067, 077, & 086.

THE QUESTION ON 077 WAS WHAT WAS THE DATE OF THE
NCR PC-4703? MR. IDE INDICATED THIS DATE WAS
10-5-82. PFR 077 - FIRST PART DEALS WITH A MISSING
4160V SWITCHGEAR ASSEMBLY EQUIPMENT TAG NO. APS
FELT THIS WAS AN INVALID PFR & CITED SPEC
13EM-009 SECTION 4.6.9.1 AS BACK-UP. BENHAM POINTED OUT
THAT A UNIQUE NO. HAD BEEN ASSIGNED TO THE OVERALL
SWGR. ASSEMBLY BY THE EQUIPMENT LOG AND ALSO THAT
TABLE 4-1 OF SPEC. 13-EM-009 SPECIFIES THAT THE NAMEPLATE
FOR THE SWGR. ASSEMBLY SHALL BE GREEN IN COLOR.
BASED ON THESE TWO POINTS TPT FEELS PFR IS VALID.

ACTION ITEMS:	Date	Person
	Required	Responsible

DISTRIBUTION: _____

File No.: _____

THE THIRD PFR WAS 086 AND THE QUESTION WAS ASKED OF APS AS TO THE MEANING OF THE (U) TYPE DESIGNATORS LAC & LLD. THEY DID NOT KNOW & MR. PENNICK SAID HE WOULD CHECK ON IT. HE LATER RETURNED AND SAID HE THOUGHT IT HAD TO DO WITH THE LOCATION OF THE MOUNTING HOLES. MR. BENHAM INDICATED THIS (MOUNTING HOLES) IS A FUNCTION OF THE FRAME NO. MR. PENNICK SAID HE WOULD CHECK FURTHER & CALL INFO TO MR. PHELPS. MR. BENHAM SAID HE WOULD CHECK WITH THE LOCAL (U) OFFICE.

PHELPS THEN DISCUSSED: PFR-081, in which APS says that DRESSER and KEROTEST valves actually installed in the plant are correct for the application, and that the data base would be corrected. APS was asked how they could support their answer, since it's equally possible that the documentation is correct and the valves are wrong. APS said they checked with Bechtel in Downey to verify that the designer had actually specified the valves which are installed, and that they are correct. Phelps asked APS to send TPT documentation from Bechtel which says that what's there is OK.


Also addressed was inconsistent code tag information for the 'B' train containment spray pump, PFR-083, Item C. APS said that TPT referenced the wrong code data document. We used the 'A' train pump document instead of the 'B' train document. Phelps asked APS to verify this and call back. APS did so & determined that TPT had in fact used the wrong reference document. The correct document agrees with the plant installation, therefore, this portion of Item C is Invalid. APS is to photocopy the ^{DDP} ~~correct~~ reference document for the 'A' pump for comparison.

Attached-

R.D. Phelps

10-12-82

* Supplemental sheets in form of lists, sketches or drawings may be used provided (1) size is 8-1/2" x 11", (2) information in items 1, 2 and 5 on this Data Report is included on each sheet, and (3) each sheet is numbered and number of sheets is recorded at top of this form.

Q5.0 (2)  (2M - STA - P03) R.D. Mills
10-12-62

POTENTIAL FINDING REPORT
PVNGS QUALITY ASSURANCE VERIFICATION

pg. 23

PFR NO. 2426-PFR -083 REVISION Issue A

A. PREPARATION BY GA INITIATOR

AFFECTED ITEMS:

- | | |
|--------------------------------------|----------------------|
| a. Motor operated valve 2J-SIB-HV696 | d. Valve 1P-AFB-V080 |
| b. Valve 1P-SIE-V827 | e. Valve 1P-AFB-V082 |
| c. Containment Spray Pump 2M-SIB-PO3 | |

REQUIREMENT REFERENCE DOCUMENTS:

See page 1A

BASIC REQUIREMENT:

The information match design document information.

DESCRIPTION OF POTENTIAL FINDING:

Tag information does not match the information given on the design documents.
For specific items see page ~~1A~~.

23A

(See attachments 1 - 6)

PREPARED BY: P. Rasmusson

P. Rasmusson

DATE: 9/17/02

USE THE SPACE BELOW TO DOCUMENT ANY RE-REVIEW ACTION TAKEN BY INITIATOR ON THIS PFR.

SIGNATURE: _____ DATE: _____

POTENTIAL FINDING REPORT (CONT'D)	PFR NO. 2426-PFR-083	REVISION ^{Issue} <u>A</u>
PREPARED BY GA INITIATOR/TASK LEADER		PAGE NO. ^{1A} <u>23A</u>

Requirement Reference Documents

- a. 13-M-SIP-001 Rev. 7
- b. Code data report sheet.
- c. Code data report sheet, 13-M-SIP-001, Rev. 7.
- d. 13-AFP-001, Rev. 10
- e. 13-AFP-001, Rev. 10, Computer data base "Valve Req't Masterfile Inquiry".
- f. Computer data base , 01-P-ZZ6-015 Rev. 6

Description of Potential Finding

- a. Field tag is 2J-SIA-HV696 Documents show 2J-SIB-HV696.
- b. Field serial number is H675AAE and pump number is 1"-715OW-1-XMB3-NC054
Code data report serial number is H544 AAE and Pump number is 1"-715OW-1-XMB2-NC054
- c. Field code tag serial number is 087643. National Board Number is 410.
Bechtel Tag Number is 2M-SIB-~~P03~~^{T P03}
Code Data Report Serial Number is 087642. National Board Number is 409.
Bechtel Tag Number is 2M-SIB-P03.
- d. Field tag is 1P-AFE-V080.
Documents show 1P-AFB-V080.
- e. Field tag is 1P-AFE-V082.
Documents show 1P-AFB-V082.

Field serial number is H625AAC
Documents show H625AAO

- f. For valve 1P-AFB-V080 there is a discrepancy between the computer data base and the valve designation list 01-P-ZZ6 , Rev. 6. The computer base gives 1P-AFB-V080 and the valve designation list gives 1P-AFE-V080.

B. REVIEW BY GA TASK LEADER

PFR NO. 2426-PFR - 083

pg. 24 / issue
REVISION A

☐ REQUEST RE-REVIEW

REASONS:

BY: _____ DATE: _____

☒ AGREE PF IS VALID/~~INVALID~~

☐ DISAGREE WITH INITIATOR

REASONS:

BY: [Signature] DATE: 9/17/82

BY: _____ DATE: _____

C., D. SEE ATTACHED SECTIONS C AND D (PAGE 3)

E. RECOMMENDATION BY FINDINGS REVIEW COMMITTEE

DEFINITION: ☐ ADEQUATE ☐ INADEQUATE

VALIDITY: ☐ VALID ☐ INVALID

CLASSIFICATION: ☐ OBSERVATION ☐ FINDING

JUSTIFICATION

CLASSIFICATION CRITERION NO. RESULTING IN "FINDING" _____

COMMENT ON "OBSERVATION" OR "FINDING" CLASSIFICATION:

ADDITIONAL INFORMATION REQUIRED

BY: _____ DATE: _____

BY: _____ DATE: _____

F. GA PROJECT MANAGER

☐ ACCEPT

☐ REJECT

BY: _____ DATE: _____

ATTACHMENT 2
PFR 883 A

PART (B) PG. 26

M.12

INDUSTRIAL VALVE
AND INSTRUMENT
DIVISION

RETENTION TIME 11 THU
PFR NO. 35735

FORM NPS-1 N CERTIFICATE HOLDERS' DATA REPORT FOR NUCLEAR PUMPS OR VALVES
(AS REQUIRED BY THE PROVISIONS OF THE ASME CODE, SECTION III, DIV. 1)

R5325 (A)

1. MANUFACTURED BY DRESSER INDUSTRIAL VALVE & INSTR. DIV., HIGHWAY 71 NORTH ALEXANDRIA, LOUISIANA
(NAME AND ADDRESS OF N. CERTIFICATE HOLDER)
2. MANUFACTURED FOR Arizona Public Serv. Co., P.O. Box 49, Palo Verde, Arizona 85343
(NAME AND ADDRESS OF PURCHASER OR USER)
3. LOCATION OF INSTALLATION Palo Verde Nuclear Gen. Sta., 3MI. So. of Wintersburg, Arizona
(NAME AND ADDRESS)
4. PUMP OR VALVE 1" 7150W-1-XIB2-NC054 NOMINAL INLET SIZE 1" COLLET SIZE 1"
XHB3 FIELD
(INCH) (INCH)

(A) MODEL NO. OR TYPE	(B) N. CERTIFICATE HOLDERS' SERIAL NO.	(C) DESIGN REGISTRATION NO.	(D) DRAWING NO.	(E) CLASS	(F) MATL. AC. NO.	(G) YEAR BUILT
(1) 7150W	H540AAE		3NC054	2		1978
(2) 7150W	H541AAE		3NC054	2		1978
(3) 7150W	H542AAE		3NC054	2		1978
(4) 7150W	H543AAE	H675AAE - FIELD	3NC054	2		1978
(5) 7150W	H544AAE	H544AAE	3NC054	2		1978
(6) 7150W	H545AAE		3NC054	2		1978
(7) 7150W	H546AAE		3NC054	2		1978
(8) 7150W	H547AAE		3NC054	2		1978
(9)						
(10)						

5. Designed for Water, Air or Steam
(BRIEF DESCRIPTION OF SERVICE FOR WHICH EQUIPMENT WAS DESIGNED)
6. DESIGN CONDITIONS 2240 PSI 4800 °F OR VALVE PRESSURE CLASS _____
(PRESSURE) (TEMPERATURE)
7. COLD MORNING PRESSURE 3600
8. PRESSURE RETAINING PIECES

MARK NO.	MATERIAL SPEC. NO.	MANUFACTURER	REMARKS
(A) CASTINGS			
(B) FORGINGS			
B-13	SA182 Gr. 316	Universal Cylinders	Red/Yellow
12	SA182 Gr. F316	Laue Ann Tool Co.	Yellow

(1) FOR MANUALLY OPERATED VALVES ONLY

SUPPLEMENTAL SHEETS IN FORM OF LISTS, SKETCHES OR DRAWINGS MAY BE USED PROVIDED (1) SIZE IS 8 1/2" x 11", (2) INFORMATION IN ITEMS 1, 2 AND 5 OF THIS DATA REPORT IS INCLUDED ON EACH SHEET, AND (3) EACH SHEET IS NUMBERED AND NUMBER OF SHEETS IS PROVIDED AT TOP OF THIS SET.

FORM NPV-1 N CERTIFICATE HOLDERS' DATA REPORT FOR NUCLEAR PUMPS OR VALVES

As Required by the Provisions of the ASME Code, Section III, Div. 1

ATTACHMENT 3
242C-PFR-DF3 A

44430
LT. YRS.

44930
3.3.5-14-81

R531(11)

1. Manufactured by Ingersoll-Rand Company, Cameron Pump Division, Phillipsburg, N.J.
(Name and Address of N Certificate Holder)
2. Manufactured for Combustion Engineering, Windsor, Conn. **PART (C)**
(Name and Address of Purchaser or Owner)
3. Location of Installation Arizona Public Service, Unit #2, Palo Verde, Arizona **pg. 27**
(Name and Address)
4. Pump or Valve Pump Nominal Inlet Size 1 1/2" Outlet Size 8"
(inch) (inch)

(a) Model No. Series No. Spr. Type	(b) N Certificate Holder's Serial No.	(c) Canadian Registration No.	(d) Drawing No.	(e) Class	(f) Nat'l. B.C. No.	(g) Year Built
8X23WDF	087642	N/A	8X23WDF86X5B	2	409	1978
(1)						
(2)						
(3)						
(4)						
(5)						
(6)						
(7)						
(8)						
(9)						
(10)						

Containment Spray Pump

(Brief description of service for which equipment was designed)

6. Design Conditions 710 psi 400 °F or Valve Pressure Class N/A (1)
7. Cold Working Pressure N/A psi at 100°F.
8. Pressure Retaining Pieces

Mark No.	Material Spec. No.	Manufacturer	Remarks
(a) Castings			
N/A			
(b) Forgings			
Casing	SA182F304	Cameron Iron Wrks	S/N 91365
St. Box Ext.	SA182F304	McInnes Steel	S/N 93335

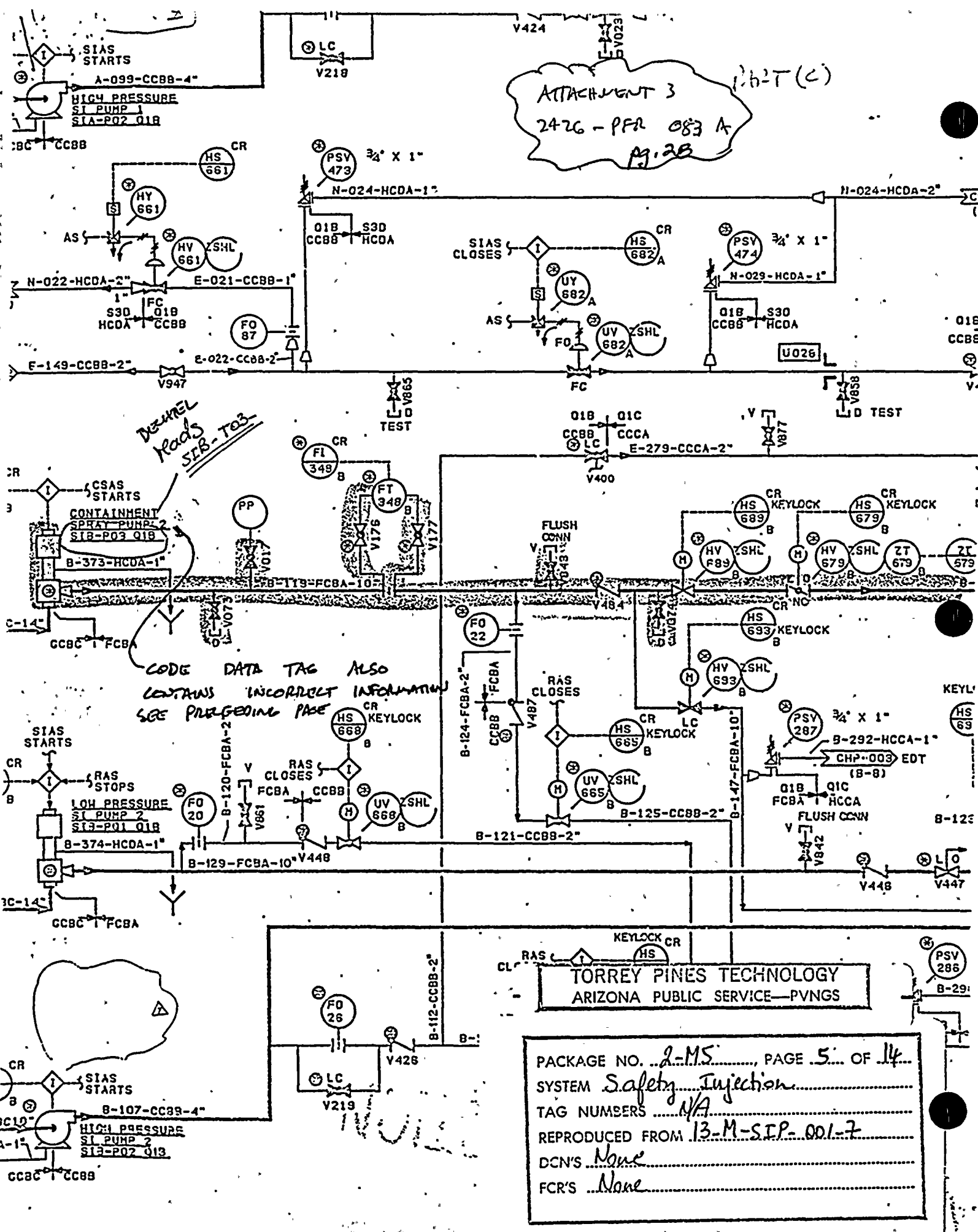
TORREY PINES TECHNOLOGY
ARIZONA PUBLIC SERVICE—PVNGS

PACKAGE NO. 2-M5, PAGE 7 OF 14
SYSTEM Safety Injection
TAG NUMBERS 2M-JIB-P03-Q1B
REPRODUCED FROM P0.950093
DCN'S N/A
FCR'S N/A

(1) For manually operated valves only.

* Supplemental sheets in form of lists, sketches or drawings in items 1, 2 and 5 on this Data Report is included on each st is recorded at top of this form.

(This is from the supplier package for the #1 trans pump.)



ATTACHMENT 3
2426 - PFR 083 A
Pg. 28

DEUEL
Roads
SIB-TO3

CODE DATA TAG ALSO
CONTAINS INCORRECT INFORMATION
SEE PRECEDING PAGE

TORREY PINES TECHNOLOGY
ARIZONA PUBLIC SERVICE-PVNGS

PACKAGE NO. 2-M5, PAGE 5 OF 14
SYSTEM Safety Injection
TAG NUMBERS N/A
REPRODUCED FROM 13-M-SIP-001-7
DCN'S None
FCR'S None

Attachment 4
Pg. 10
Part D

DR018B

VALVE REPAIR/REPLACE MASTER/INDUSTRY

08/31/82

TAG AREA P & ID DRAWING SYSTEM PIPING DWG LINE MARK MATL
NUMBER NO NUMBER CRD RV ENG: S/U NUMBER REV NO NO CLS ST7F
13PM221B ZCAA 13MAFF001 001 01 13PM221B 001 001 000A

BECHTEL CODE OF VENDOR DATA PLAN
SPEC/PO ACCOUNT ATTACH LOG NUMBER CODE SERIAL NUMBER
13PM221B N/A P221B-302-125

INSTALL REL S/U
CD DATE CD DATE CD DATE CD DATE REQ DT CD CLS CD CLS ITEM RV INI
I 230782 R 230782 R 230782 Y DLE 0 0 000 Y

DESIGN OPERATING VENDOR SHOP SURPLUS MANUFACTURER REL TO SHIP
PRES TEMP PRES TEMP OTHER NO VALUE NO NAME
1675-0120 1425-0075 2M294 013E005

VENDOR NAME REMARK
ANCHOR/DARLING

CMD1=MASTER MENU CMD2=PREVIOUS PROMPT ROLLKEYS ACTIVE

TORREY PINES TECHNOLOGY
ARIZONA PUBLIC SERVICE PVNGS

PACKAGE NO. 1-M3, PAGE 10 OF 13
SYSTEM AUXILIARY FEEDWATER
TAG NUMBERS 1 PAFBV080
REPRODUCED FROM 01-P-276-015
DCN'S NONE
FCR'S NONE

PR-083
Pg. 30

VENDOR NAME: •
DISCIPLINE: N

USE-AS-TRAIN-B

Pg. 12
 ATTACHMENT 65
 1436 PFR 083 A

PART (E)

DRO18B

REQUIREMENT BASED FILE INDUSTRY

08/31/82

TAG NUMBER AREA P & ID DRAWING SYSTEM PIPING DWG LINE MARK MATL NO NUMBER CRD RV ENG S/U NUMBER REV NO NO CLS SIZE

IPAFBV082
 BECHTEL
 SPEC/PO
 13PM221A

CODE OF
 ACCOUNT

ATTACH
 N/A

VENDOR DATA
 LOG NUMBER
 P221A-302-63

PLAN
 ICODE

SERIAL NUMBER
 17.0000

INSTALL REL S/U CD DATE CD DATE CD DATE CD DATE REQ DT CD CLS CD CLS ITEM RV JND
 I 111281 R 111281 X 01E 124 Y

DESIGN OPERATING VENDOR SHOP SURPLUS MANUFACTURER REL TO SHIP
 PRES TEMP PRES TEMP ORDER NO. VALVE NO NAME /CPOR
 1675-0120 1425-0075 006E024

VENDOR NAME
 DRESSER

REMARK

CMD1=MASTER MENU CMD2=PREVIOUS PROMPT ROLLKEYS ACTIVE

TORREY PINES TECHNOLOGY
 ARIZONA PUBLIC SERVICE - PVNGS

PACKAGE NO. 1-M3, PAGE 11 OF 13
 SYSTEM AUXILIARY FEED WATER
 TAG NUMBERS 1PAEBV082
 REPRODUCED FROM 13-P-226-015
 DCN'S NONE
 FCR'S NONE

13-083
 15, 32

UNIT: A-1 SYSTEM: * P.O.: *
P&ID: * SURPLUS VALVE: * VENDOR NAME: *
DISCIPLINE: N

TAG	NUMBER	SIZE	MARK NO	SYSTEM ENG S/U	PROJ CLS	RELEASE TO SHIP NO	ENV CDE	MATL CLS	LINE NO	AREA NO	PIPING DWG NUMBER	P & ID DRAWING NUMBER	CRD RV	SERIAL NUMBER
VENDOR DATA			DESIGN		OPERATION		BECHTEL		P.O.		RECD		VEND PROM	
LOG NUMBER			PRES TEMP		PRES TEMP		SPEC/PO		ITEM REV		SITE		AT SITE	
REOSTN			INSTALL		REL TO S/U									
CD DATE			CD DATE		CD DATE									

CODE ACCOUNT SURPLUS VALVE ATTACH VENDOR NAME VEND SHIP ORD REMARK

1PAFAV075 1.00 329 1AFO1 01B 006E038 XX DCBA 016 ZCAA 13PAFF132 13MAFP001 D03 04
P221A-302-63 1675 0120 1425 0075 13PM221A 124 150679 1-260281 C-310381

N/A DRESSER DRAIN

1PAFAV076 1.00 306 1AFO1 01A 006E037 XX DCCA 015 ZCAA 13PAFF132
P221A-302-115 1675 0120 1425 0075 13PM221A 122 150679

N/A DRESSER USE

1PAFAV077 6.00 075 1CT01 01C 008E007 XX DCCA 009 ZY00 13PZ
P221B-302-104 1675 0120 1425 0075 13PM221B 048 011079

N/A ANCHOR/DARLING 2M294

1PAFBV078 6.00 075 1CT01 01C 008E007 XX DCCA 011 ZY00 13PZ
P221B-302-104 1675 0120 1425 0075 13PM221B 048 011079

N/A ANCHOR/DARLING 2M294

1PAFAV079 6.00 589 1AFO1 01B 013E003 X DCBA 004 ZC11 13PS
P221B-302-125 1675 0120 1425 0075 13PM221B 055

N/A ANCHOR/DARLING 2M294

1PAFBV079 6.00 589 1AFO1 01B 013E003 X DCBA 006 ZCAA 13PS
P221B-302-125 1675 0120 1425 0075 13PM221B 055

N/A ANCHOR/DARLING 2M294

1PAFAV080 6.00 589 1AFO1 01B X DCBA 006 ZCAA 13PSGF120 13MAFP001 C01 5746-159-1-2
P221B-302-125 1660 0120 1425 0075 13PM221B 055 010579 R-090680 I-061081 C-261081

N/A ANCHOR/DARLING 2M294 USE TRAIN B

1PAFAV081 1.00 329 1AFO1 01B 006E024 X DCBA 004 ZC11 13PSGF120 13MAFP001 E01 01
P221A-302-63 1675 0120 1425 0075 13PM221A 124 I-111281 R-111281

N/A DRESSER

1PAFEV081 1AFO1

R-300779
USE-AS-TRAIN-A

1PAFAV082 1.00 329 1AFO1 01B 006E024 X DCBA 006 ZCAA 13PAFF133 13MAFP001 C01 01
P221A-302-63 1675 0120 1425 0075 13PM221A 124 I-111281 R-111281

N/A DRESSER

1PAFAV083 1AFO2

R-300779
USE-AS-TRAIN-B

TORREY PINES TECHNOLOGY
ARIZONA PUBLIC SERVICE—PVNGS

PACKAGE NO. 1-M3, PAGE 2A OF 13
SYSTEM AUXILIARY FEEDWATER
TAG NUMBERS 1PAFEV080, 1PAFBV082
REPRODUCED FROM 01-P-226-015, Rev. 6
DCN'S
FCR'S

PR-083
pg. 33

DR018B

08/31/82

~~VALVE REQUIREMENTS~~

TAG AREA P & ID DRAWING SYSTEM PIPING DWG LINE MARK MATL
NUMBER NO NUMBER CRD RV ENG S/U NUMBER REV NO NO CLS SIZE

18PM221B 13MAFF001 071 01 18PM221B 18PM221B 000 000 000 000

18PM221B 18PM221B 18PM221B 18PM221B 18PM221B 18PM221B 18PM221B 18PM221B

18PM221B 18PM221B 18PM221B 18PM221B 18PM221B 18PM221B 18PM221B 18PM221B

18PM221B 18PM221B 18PM221B 18PM221B 18PM221B 18PM221B 18PM221B 18PM221B

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18PM221B 18PM221B 18PM221B 18PM221B 18PM221B 18PM221B 18PM221B 18PM221B

TORREY PINES TECHNOLOGY
ARIZONA PUBLIC SERVICE—PVNGS

PACKAGE NO. 1-M3, PAGE 10 OF 13
SYSTEM AUXILIARY FEEDWATER
TAG NUMBERS 1PAFBV080
REPRODUCED FROM 01-P-226-015
DCN'S NONE
FCR'S NONE

PF2-083
pg. 34

IMPACT ASSESSMENT

PFR NO. 2426-PFR-083 REVISION C

AFFECTED ITEM: a. Motor operated valve 2J-SIB-HV696 e. Valve 1P-AFB-V082
 b. Valve 1P-SIE-V827 f. Deleted per Rev. C h. Valve 2P-AFB-V080
 c. Containment Spray Pump 2M-SIB-P03 g. Valve 1P-AFB-V138 i. Valve 2P-AFB-V082
 d. Valve 1P-AFB-V080

A. PREPARATION BY GA INITIATOR:

1. WHICH OF THE FIRST TWO POTENTIAL FINDING CLASSIFICATION CRITERIA APPLIES TO THIS PFR?

1 ☐, 2 ☐,

2. IN WHAT WAY MIGHT A SUBSTANTIAL SAFETY HAZARD BE CREATED AS A RESULT OF THE VIOLATION, DISCREPANCY OR ERROR (IF 1 OR 2 ABOVE WAS CHECKED)?:

3. OTHER COMMENTS:

See attached sheet.

PREPARED BY:

R. D. Phelps

DATE:

10/13/82

B. PREPARATION BY GA TASK LEADER:

1. COMMENT ON ABOVE REPLIES:

Concur with Initiator's comments.

2. DOES EVIDENCE EXIST OF MULTIPLE SIMILAR VIOLATIONS, DISCREPANCIES OR ERRORS? IF SO, LIST RELEVANT PFR NO'S:

PFR-053 (mistagged valve); PFR-080 (mistagged motor)

3. IF POTENTIAL FINDING CLASSIFICATION CRITERIA 3, 4, OR 5 APPLIES, STATE WHICH ONE:

3 ☐, 4 ☐, 5 ☐

4. WHAT IS YOUR JUDGEMENT OF THE LIKELIHOOD OF MULTIPLE SIMILAR VIOLATIONS, DISCREPANCIES OR ERRORS ACTUALLY CREATING A SUBSTANTIAL SAFETY HAZARD - AND OF WHAT NATURE?

Statistics from walkdown:

Unit 1 - 53 valves examined; 4 mistagged
Unit 2 - 41 " " ; 2 mistagged

5. OTHER COMMENTS:

PREPARED BY:

F. J. J. J.

DATE:

10/13/82

Attachment to the Impact Assessment for PFR-083

Mistagging of valves and equipment, in itself, does not result in a substantial safety hazard. Function does not depend on the contents of a tag, assuming only the tag is in error. If the tag is correct, however, then the equipment is in question and it must then be established that the deviation will not affect safety function. Further, it is generally regarded that plant operating personnel must assume that the content of a tag is correct, and they will base their subsequent overt actions on this knowledge. An incorrect tag could then lead to the development of inadvertent events which might ultimately constitute a substantial safety hazard.

R. D. Phelps

10-13-82

PCB

POTENTIAL FINDING REPORT
PVNGS QUALITY ASSURANCE VERIFICATION

PFR NO. 2426-PFR -084 REVISION Issue A

A. PREPARATION BY GA INITIATOR

AFFECTED ITEMS:

01JAFBZI-31A

REQUIREMENT REFERENCE DOCUMENTS:

Main Control Board 306 Bill of Material (attachment)

BASIC REQUIREMENT:

Nameplate data should conform to Spec. requirements

DESCRIPTION OF POTENTIAL FINDING:

Incorrectly tagged "6-AFB-ZI-31" on rear of panel ("A" was omitted)

PREPARED BY: R. Benham/R. Darwin/W. Long DATE: 9/17/82

USE THE SPACE BELOW TO DOCUMENT ANY RE-REVIEW ACTION TAKEN BY INITIATOR ON THIS PFR.

SIGNATURE: _____ DATE: _____

B. REVIEW BY GA TASK LEADER

PFR NO. 2426-PFR

-084

REVISION

Issue A☐ REQUEST RE-REVIEW

BY: _____

DATE: _____

REASONS:

☒ AGREE PFR IS VALID/INVALIDBY: FSO/PLTDATE: 9/17/82☐ DISAGREE WITH INITIATOR

BY: _____

DATE: _____

REASONS:

C., D. SEE ATTACHED SECTIONS C AND D (PAGE 3)**E. RECOMMENDATION BY FINDINGS REVIEW COMMITTEE****ADDITIONAL INFORMATION REQUIRED**

DEFINITION:

☒ ADEQUATE☐ INADEQUATE

VALIDITY:

☒ VALID☐ INVALID

CLASSIFICATION:

☒ OBSERVATION☐ FINDING**JUSTIFICATION**

CLASSIFICATION CRITERION NO. RESULTING IN "FINDING" _____

COMMENT ON "OBSERVATION" OR "FINDING" CLASSIFICATION:

*Observation based on assumption that
CAP for PFR 083 covers instruments
as well as equipment.*

BY: S. D. KoutzDATE: 10/14/82

BY: _____

DATE: _____

F. GA PROJECT MANAGER☒ ACCEPT☐ REJECTBY: MA ShumanDATE: 10-14-82

C. REVIEW BY ORIGINAL DESIGN ORGANIZATION

PFR NO.

084

REVISION

A

☒ AGREE

☐ DISAGREE THAT POTENTIAL FINDING IS ACCURATE

BY:

DATE: 10-5-82

IF THE "DISAGREE" BLOCK WAS CHECKED, USE THE SPACE BELOW TO PROVIDE INFORMATION THAT WOULD IMPROVE ACCURACY OR DEFINITION. (USE BACK FOR ADDITIONAL SPACE.)

D. REVIEW BY GA INITIATOR

☐ AGREE PF IS INVALID

REASON:

BY:

DATE:

REVIEW BY GA TASK LEADER

☐ AGREE PF IS INVALID

REASON:

BY:

DATE:

P.V.N.G. STATION, ARIZONA, MAIN CONTROL PANELS
BECHTEL P.O. 10407-JM-200 C.C.C. S.O. 5875

BILL OF MATERIAL
EQUIPMENT FURNISHED BY C.C.C., Y Q.IE RATED

SH. 2-4

S.C.	COPY	SUPPLIER	DESCRIPTION	E.W.D. ISSUE NOS	PNL ITM	INST. TAG NO. ADD PREFIX 6 TO TAG	REF. W.D. No. REMARKS
56	(E-5875-107-6) ITEM-A	INT. INST. Co	SIGMA TYPE 1122 AMMETER, INPUT; 0 to 50 mA., 60 HZ FROM REMOTE 5-/0.05 A. AUX. C.T. SCALE; 0 to 200 (INDICATES AMPS AC) ENGRAVING: AMPS SCREW TERMINALS		177 180	AFB HS-10 AFA-HS-11	AFB 001 " 002
76	(E-5875-107-6) ITEM-B	"	SIGMA P.I. VOLTMETER, TYPE 1122 INPUT; 0 to 10 VOLT A.C. SCALE; 0 to 100 (INDICATES % OPEN) ENGRAVING; PERCENT SCREW TERMINALS		166 171 18 81	AFB ZI-30A " ZI-31A AFA ZI-32A AFCZI-33A	AFB-003- " " AFB-004 " 006

Attachment to
2426-PFR-084

TORREY FINES TECHNOLOGY
ARIZONA PUBLIC SERVICE - PVNGS

PACKAGE NO. I-E-1, PAGE OF
SYSTEM AUX FEEDWATER
TAG NUMBERS 1JAFBZI 0031A
REPRODUCED FROM MAIN CONTROL BOARD B06
BILL OF MATERIAL
DCN'S NONE
FCR'S NONE

No. ON BACK
Tag 6 AFB ZI 31
is missing

PFR-084 pg. 4

IMPACT ASSESSMENT

PFR NO. 2426-PFR-084 REVISION Issue A

AFFECTED ITEM: 01JAFBZI-31A

A. PREPARATION BY GA INITIATOR:

1. WHICH OF THE FIRST TWO POTENTIAL FINDING CLASSIFICATION CRITERIA APPLIES TO THIS PFR?

Neither 1 ☐, 2 ☐

2. IN WHAT WAY MIGHT A SUBSTANTIAL SAFETY HAZARD BE CREATED AS A RESULT OF THE VIOLATION, DISCREPANCY OR ERROR (IF 1 OR 2 ABOVE WAS CHECKED)?:

N/A

3. OTHER COMMENTS: This problem should be corrected by providing a completed permanent instrument tag. Recommend this PFR be classified to an "observation".

PREPARED BY: R. Benham *R. Benham* DATE: 10-11-82

B. PREPARATION BY GA TASK LEADER:

1. COMMENT ON ABOVE REPLIES:

Concur with Initiator's assessment for this specific violation - no safety impact.

2. DOES EVIDENCE EXIST OF MULTIPLE SIMILAR VIOLATIONS, DISCREPANCIES OR ERRORS? IF SO, LIST RELEVANT PFR NO'S: PFR-086, -080

3. IF POTENTIAL FINDING CLASSIFICATION CRITERIA 3, 4, OR 5 APPLIES, STATE WHICH ONE: 3 ☐, 4 ☐, 5 ☐

4. WHAT IS YOUR JUDGEMENT OF THE LIKELIHOOD OF MULTIPLE SIMILAR VIOLATIONS, DISCREPANCIES OR ERRORS ACTUALLY CREATING A SUBSTANTIAL SAFETY HAZARD - AND OF WHAT NATURE?

Not likely - the examples of wrong information on tags for instruments noted during the walkdown will not result in operator error.

5. OTHER COMMENTS:

PREPARED BY: *F. S. Jones* DATE: 10/11/82

POTENTIAL FINDING REPORT
PVNGS QUALITY ASSURANCE VERIFICATION

PFR NO. 2426-PFR -085 REVISION ~~Issue~~ B

A. PREPARATION BY GA INITIATOR

AFFECTED ITEMS:

01JAFNTE-0086
01JAFNTE-0088

REQUIREMENT REFERENCE DOCUMENTS:

N/A

BASIC REQUIREMENT:

Raceways should be identified in accordance with accepted engineering practice.

DESCRIPTION OF POTENTIAL FINDING: Raceway (Flex conduit) to Aux. Feedwater Pump Bearing Temperature Thermocouples TE-86 and TE-88 are not identified with a raceway number. Conduits should be identified as follows per cable termination cards (TE-86) 1EZCAENRX14 and (TE-88) 1EZCCAENRX15 (Attached).

PREPARED BY: R. Benham *R Benham* DATE: 10-6-82

USE THE SPACE BELOW TO DOCUMENT ANY RE-REVIEW ACTION TAKEN BY INITIATOR ON THIS PFR.

SIGNATURE: _____ DATE: _____

B. REVIEW BY GA TASK LEADER

PFR NO. 2426-PFR

- 085

REVISION

B

☐ REQUEST RE-REVIEW

BY: _____

DATE: _____

REASONS:

☒ AGREE PFR IS ~~VALID~~/INVALIDBY: BoplerDATE: 10/6/82☐ DISAGREE WITH INITIATOR

BY: _____

DATE: _____

REASONS:

Initiators have reviewed APS' response to Issue A and, based on additional information provided, concur that PFR is invalid. See Issue A, Part D. Revision B is a clarification of Page 1 of the PFR.

C., D. SEE ATTACHED SECTIONS C AND D (PAGE 3)

E. RECOMMENDATION BY FINDINGS REVIEW COMMITTEE

ADDITIONAL INFORMATION REQUIRED

DEFINITION:

☒ ADEQUATE☐ INADEQUATE

VALIDITY:

☐ VALID☒ INVALID

CLASSIFICATION:

☐ OBSERVATION☐ FINDING

JUSTIFICATION

CLASSIFICATION CRITERION NO. RESULTING IN "FINDING" _____

COMMENT ON "OBSERVATION" OR "FINDING" CLASSIFICATION:

BY: S. L. KouzDATE: 10/7/82

BY: _____

DATE: _____

F. GA PROJECT MANAGER

☒ ACCEPT☐ REJECTBY: [Signature]DATE: 10-7-82

POTENTIAL FINDING REPORT
PVNGS QUALITY ASSURANCE VERIFICATION

pg. 3

PFR NO. 2426-PFR -085 REVISION Issue A

A. PREPARATION BY GA INITIATOR

AFFECTED ITEMS:

01JAFNTE-0086
01JAFNTE-0088

REQUIREMENT REFERENCE DOCUMENTS:

Cable termination cards 1EAF01NCKF2 and 1EAFONC2XD2

BASIC REQUIREMENT:

Raceways should be identified

DESCRIPTION OF POTENTIAL FINDING:

Raceway (Flex conduit) to Aux Feedwater Pump Bearing Temperature Thermocouples TE-86 and TE 88 are not identified with a raceway number. Conduits should be identified as follows per cable termination cards (TE-86) 1EZCAENRX14 and (TE-88) 1EZCCAENRX15.

PREPARED BY: *R. Benham/R. Darwin/W. Long*

DATE: 9/17/82

USE THE SPACE BELOW TO DOCUMENT ANY RE-REVIEW ACTION TAKEN BY INITIATOR ON THIS PFR.

SIGNATURE: _____ DATE: _____

B. REVIEW BY GA TASK LEADER

PFR NO. 2426-PFR -085 ^{pg. 4 / ssure}

REVISION A

☐ REQUEST RE-REVIEW

BY: _____ DATE: _____

REASONS:

~~AND~~ ☒ AGREE PF IS VALID/~~INVALID~~

BY: F. S. [Signature] DATE: 9/17/82

☐ DISAGREE WITH INITIATOR

BY: _____ DATE: _____

REASONS:

C., D. SEE ATTACHED SECTIONS C AND D (PAGE 3)

E. RECOMMENDATION BY FINDINGS REVIEW COMMITTEE

ADDITIONAL INFORMATION REQUIRED

DEFINITION:

☐ ADEQUATE

☐ INADEQUATE

VALIDITY:

☐ VALID

☐ INVALID

CLASSIFICATION:

☐ OBSERVATION

☐ FINDING

JUSTIFICATION

CLASSIFICATION CRITERION NO. RESULTING IN "FINDING" _____

COMMENT ON "OBSERVATION" OR "FINDING" CLASSIFICATION:

BY: _____ DATE: _____ BY: _____ DATE: _____

F. GA PROJECT MANAGER

☐ ACCEPT

☐ REJECT

BY: _____ DATE: _____

C. REVIEW BY ORIGINAL DESIGN ORGANIZATION

PFR NO. _____

085, pg. 5

REVISION A

☐ AGREE ☒ DISAGREE THAT POTENTIAL FINDING IS ACCURATEBY: *U. Sole* DATE: 9-30-82

IF THE "DISAGREE" BLOCK WAS CHECKED, USE THE SPACE BELOW TO PROVIDE INFORMATION THAT WOULD IMPROVE ACCURACY OR DEFINITION. (USE BACK FOR ADDITIONAL SPACE.)

Although the referenced flexible conduit is not identified with the raceway number, this is not a violation of project criteria. SCN 2853 to Specification 13-EM-303 states that, "Flexible seal tight conduit of the same safety channel, 5 feet nominal or less in length, routed from a common junction point...to a single device that has a tag number and is listed in the EE 580 as a location, need not be identified. (The To and From locations provide the identification)." The raceways in question are approximately two (2) feet long and meet the requirements of SCN 2853. Therefore this flexible conduit does not require identification.

A copy of SCN 2853 to 13-EM-303 is attached.

D. REVIEW BY GA INITIATOR

☒ AGREE PF IS INVALID

REASON:

I concur with the information provided by AP5, above.

BY: *R. R. Burham* DATE: 10-5-82

REVIEW BY GA TASK LEADER

☒ AGREE PF IS INVALID

REASON:

Concur with Initiator's recommendation to invalidate this PFR.

BY: *F. S. Plush* DATE: 10/6/82

<p>PALO VERDE NUCLEAR GENERATING STATION</p> <p>PROJECT FILE</p> <p>FIELD CHANGE REQUEST</p> <p>JOB NO. 10407</p>		<p>1. PAGE <u>1</u> OF <u>2</u></p> <p>2. NO. <u>28,549-E</u></p> <p>3. MO DAY YR <u>11</u> <u>11</u> <u>81</u></p> <p>DATE</p>		<p>13A DCNNO. <u>N/A</u></p> <p>13B. SCNNO. <u>2853</u></p>	
<p>4. REF DWG OR SPEC <u>13-EM-303</u></p>		<p>REV <u>7</u></p>		<p>5. TITLE <u>INSTALLATION SPECIFICATION FOR ELECT. CABLE & RAILWAY ID</u></p>	
<p>6. DESIGN ORIGIN: <input checked="" type="checkbox"/> ENGINEERING <input type="checkbox"/> SUPPLIER (IDENTIFY BY NAME)</p>				<p>7. <input checked="" type="checkbox"/> UNIT 1 <input checked="" type="checkbox"/> UNIT 3</p> <p><input checked="" type="checkbox"/> UNIT 2 <input type="checkbox"/> COMMON</p>	
<p>8. EXISTING CONDITION</p> <p style="text-align: center;"><u>IDENTIFICATION OF FLEX CONDUIT REQUIRES CLARIFICATION.</u></p>					
<p>9. CHANGE REQUEST/SKETCH</p> <p style="text-align: center;">1) THIS FCR VOIDS SCN # 2765</p> <p style="text-align: center;">2) THIS FCR SUPERCEDES FCR # 27,722-E (SCN 2845)</p> <p style="text-align: center;">3) CHANGE & ADD TO SECTION 9.3.2 AS SHOWN ON SHEET 2</p>					
<p>INFORMATION ONLY</p> <p>RECEIVED</p> <p>DEC 9 1981</p> <p>CONSTRUCTION DIVISION</p>					
<p>10 REVIEWED BY: <u>[Signature]</u></p> <p>DISCIPLINE FIELD ENGINEER</p>			<p>11. PREPARED BY: <u>M. L. ALEXANDER</u></p> <p>DATE <u>11/11/81</u></p>		
<p>13. BECHTEL ENGINEERING <input checked="" type="checkbox"/> APPROVED <input type="checkbox"/> DISAPPROVED</p> <p><u>V. Angelo</u> GROUP SUPERVISOR</p> <p><u>[Signature]</u> PROJECT ENGINEER</p>			<p>11. APPROVAL OF FIELD DISPOSITION: <u>[Signature]</u></p> <p>PROJECT FIELD ENGINEER</p> <p>DATE <u>11/13/81</u></p>		
<p>REMARKS <u>Issue SCN</u></p>			<p>14. NUCLEAR GROUP SUPERVISOR (IF REQUIRED): <u>N/A</u></p> <p>DATE <u>N/A</u></p> <p>15. PQAE (O-LISTED P&I AND SINGLE LINE DWGS) (QUALITY CLASS Q AND R SPECS) <u>N/A</u></p> <p>DATE <u>N/A</u></p>		
<p>DISTRIBUTION: ORIGINAL - PRINT COORDINATOR; COPIES TO - CLIENT, SURVEY, DISCIPLINE, AND RESIDENT ENGINEER</p> <p>ADDITIONAL DISTRIBUTION: <input type="checkbox"/> PROJECT PROCUREMENT MANAGER <input type="checkbox"/> COST TREND ENGINEER</p>					

13-EM-303

FCR # 28.549-E

PAGE 2 OF 2

PFR-085
Pg. 7

9.3.2

- f. Raceway segments shorter than 15 feet consisting of flexible seal tight conduit need not be identified. (The To and From locations provide the identification- Add example: On a flex run between a conduit and a device, both the conduit and device must be identified.)

- g. Multiple flexible seal tight conduits of the same safety channel, routed from a common junction point (junction/pull/termination box, conduit, etc.) to a common device (one device with multiple conduit entries), shall be identified. Identification to consist of the EE580 raceway number etched or die stamped on a stainless steel tag attached to the flex with stainless steel wire.
- h. Flexible seal tight conduits of the same safety channel, 5 feet nominal or less in length, routed from a common junction point (junction/pull/termination box, conduit, etc.) to a single device that has a tag number and is listed in the EE580 as a location need not be identified. (The To and From locations provide the identification).

Add

COM. TERMINATION NUMBER REV. TERMINATION CODE SEPARATION GROUP AND COLOR NO. OF CABLES NO. OF CONNECTIONS DATE ISSUED ICD ISSUE NO.
 EC 1EAF01NC2XD F16 85.23
 COM. CABLE NUMBER CABLE CODE
 Attachment to 2426-PFR-085 Page 8
 TERMINATION DESCRIPTION
 ACCOUNT CODE

LOCATION OF TERMINATION
 E* 1JRJNC16 CM PLANT COMPUTER
 COM. LOCATION NUMBER LOCATION CODE LOCATION DESCRIPTION
 COMPUTER TORREY PINES TECHNOLOGY ARIZONA PUBLIC SERVICE-PVNGS
 EK 1EZJ3ANKXC8G 13E2JC09 01
 LAST RACEWAY LAYOUT DRAWING REV.

THE CONDUCTORS MUST BE CONNECTED TO THE FC

BLOCK	POINT	S	COLOR	WIRE NO.	BLOCK
CF01	17		YELD	3Y	
CF01	18		RED	3R	
			SHLD	*SHLD	

 PACKAGE NO. 1-E-1, PAGE OF SYSTEM Aux. FEED WATER TAG NUMBERS TE 86 REPRODUCED FROM CABLE TERMINATION CARD DCN'S N/A FCR'S N/A
 GEWKDC 1EAF01NC2XD1 01 CC
 NO. OF CONNECTIONS CRIMP TOOL 898989
 INSTALLED BY *Cory Waller* DATE INSTALLED 2/2/81
 SIGNATURE

CONTROL AND TRACKING SYSTEM
TERMINATION INSTALLATION CARD



LW 1EAF01NC2XD2 01 EX-BLACK 01 0003 17JL81 3056
 COM. TERMINATION NUMBER REV. TERMINATION CODE SEPARATION GROUP AND COLOR NO. OF CABLES NO. OF CONNECTIONS DATE ISSUED ICD ISSUE NO.
 EC 1EAF01NC2XD F16 85.23
 COM. CABLE NUMBER CABLE CODE
 TERMINATION DESCRIPTION
 ACCOUNT CODE

LOCATION OF TERMINATION
 E- 1JAFITE86 T.T. THERMOCOOL
 C.M. LOCATION NUMBER LOCATION CODE LOCATION DESCRIPTION
 LAST CONDUIT NOT IDENTIFIED
 E- 1EZCALNXX14 13E2CC45 08
 LAST RACEWAY LAYOUT DRAWING REV. CONNECT DRAWING REV. VENDOR DRAWING REV.

THE CONDUCTORS MUST BE CONNECTED TO THE FOLLOWING POINTS:

BLOCK	POINT	S	COLOR	WIRE NO.	BLOCK	POINT	S	COLOR	WIRE NO.	BLOCK	POINT	S	COLOR	WIRE NO.
TE**	**		SHLD	*SHLD										
TE**	+N		RED	3R										
TE**	+P		YELD	3Y										

 GEWKDC 1EAF01NC2XD2 01 CC
 NO. OF CONNECTIONS CRIMP TOOL 898989
 INSTALLED BY *John Meyer* DATE INSTALLED 2/6/81
 SIGNATURE

CONTROL AND TRACKING SYSTEM
TERMINATION INSTALLATION CARD







POTENTIAL FINDING REPORT
PVNGS QUALITY ASSURANCE VERIFICATION

PFR NO. 2426-PFR -086 REVISION Issue A

A. PREPARATION BY GA INITIATOR

AFFECTED ITEMS:

01M-RFB-POL (Unit 1)
02M-AFB-PO1 (Unit 2)
03M-AFB-PO1 (Unit 3)

REQUIREMENT REFERENCE DOCUMENTS:
Manufacturers Data Sheet LACI-2

BASIC REQUIREMENT:
Nameplate data should be per spec.

DESCRIPTION OF POTENTIAL FINDING:

Motor type shown on spec. sheet (Type LLD) does not agree with nameplate on motor (Type LAC) . See Attachments

PREPARED BY:

R. Benham
R. Benham/R. Darwin/W. Long

DATE:

9/17/82

USE THE SPACE BELOW TO DOCUMENT ANY RE-REVIEW ACTION TAKEN BY INITIATOR ON THIS PFR.

SIGNATURE: _____

DATE: _____

B. REVIEW BY GA TASK LEADER

PFR NO. 2426-PFR -086

REVISION ^{Issue} A☐ REQUEST RE-REVIEW

BY: _____ DATE: _____

REASONS:

☒ AGREE PF IS VALID/INVALID☐ DISAGREE WITH INITIATOR

REASONS:

BY: JSOZLRDATE: 9/17/82

BY: _____

DATE: _____

C., D. SEE ATTACHED SECTIONS C AND D (PAGE 3)

E. RECOMMENDATION BY FINDINGS REVIEW COMMITTEE

DEFINITION:

☒ ADEQUATE☒ INADEQUATE

VALIDITY:

☒ VALID☐ INVALID

CLASSIFICATION:

☒ OBSERVATION☐ FINDING

JUSTIFICATION

CLASSIFICATION CRITERION NO. RESULTING IN "FINDING" _____

COMMENT ON "OBSERVATION" OR "FINDING" CLASSIFICATION:

The problem was that (u) put an out of date tag on the motor. However, the paper work is correct and the correct motor is installed. Therefore, there is no impact on safety.

ADDITIONAL INFORMATION REQUIRED

What is the difference between a Type L6D and a Type LAC motor? Is this difference important? Which type did the designers intend to have in the plant?

BY: S. L. KoutzDATE: 10/12/82BY: S. L. KoutzDATE: 10/11/82

F. GA PROJECT MANAGER

☒ ACCEPT☐ REJECTBY: MA SmeDATE: 10-13-82

C. REVIEW BY ORIGINAL DESIGN ORGANIZATION

PFR NO. 086

REVISION A

☒ AGREE ☐ DISAGREE THAT POTENTIAL FINDING IS ACCURATEBY: U. Loh DATE: 10-5-82

IF THE "DISAGREE" BLOCK WAS CHECKED, USE THE SPACE BELOW TO PROVIDE INFORMATION THAT WOULD IMPROVE ACCURACY OR DEFINITION. (USE BACK FOR ADDITIONAL SPACE.)

Frame should be "LAC". The Data Sheet attached to PFR-086 is incorrect. However, the rating of the motor is what is important to performance and that information is correct.

D. REVIEW BY GA INITIATOR

☐ AGREE PF IS INVALID

REASON:

BY: _____ DATE: _____

REVIEW BY GA TASK LEADER

☐ AGREE PF IS INVALID


REASON:

BY: _____ DATE: _____

October 12, 1982

ADDITIONAL INFORMATION FOR FINDINGS REVIEW COMMITTEE:

NOTE: Westinghouse at L.A. was called regarding the difference between the motor type designators LAC and LLD. They explained that LAC means Large AC motors and that LLD means Life Line Model D. All W motors today are designated LLD, and it really has no technical significance. This difference therefore has no impact on the type of motor actually installed in the plant.


R. G. Benham

From (W) INSTRUCTION BOOK
PVNGS OPERATIONS CONTROL No. TM-148A-4
BPC STATUS 1 DATE 10-27-80 2426-PFR-086
Page 5

LACI-2 - Westinghouse Motor Identification

G.O. PO-71420-L7 I.B. S.O. 77F14411

Customer BINGHAM-WILLAMETTE COMPANY

Motor S.O. 77F14408 - 77F31107 - 77F31108

Application AUXILIARY FEEDWATER PUMP MOTORS

A.C. Motor SQUIRREL CAGE TYPE LAC

Data:

Frame 6809-H Type LLD NEMA Design B

Rating:

1250 HP 4000 Volts 151 Amperes
3571 RPM 3 Phase 60 Hertz

Locked Code Letter F

Characteristics:

Enclosure W.F.

Duty CONTINUOUS

Rotation C.C.W.

Ambient Temperature 50°C.

Temperature Rise 70°C.

Service Factor 1.0

Class of Insulation "B" THERMALASTIC EPOXY

Drive COUPLED

Bearings SPLIT SLEE

Lubrication OIL

Mounting HORIZONTAL

Maintenance Instructions 3100-1

Outline Drawing 9509D96

TORREY PINES TECHNOLOGY
ARIZONA PUBLIC SERVICE—PVNGS

PACKAGE NO. 1E1, PAGE OF
SYSTEM AUXILIARY FEEDWATER
TAG NUMBER 1M-AFB-POL
REPRODUCED FROM PVNGS OPERATIONS
CONTROL No. TM148A-4
DCN'S N/A
FCR'S N/A

Attachment to
2426-PFR-086

From (W) INSTRUCTION BOOK
PUNGS OPERATIONS CONTROL No. TM-148A-4
BPC STATUS 1 DATED 10-27-80

2426-PFR-086
Page 6

LACI-2 - Westinghouse Motor Identification

G.O. PO-71420-L7 I.B. S.O. 77F14411

Customer BINGHAM-WILLAMETTE COMPANY

Motor S.O. 77F14408 - 77F31107 - 77F31108

Application AUXILIARY FEEDWATER PUMP MOTORS

A.C. Motor SQUIRREL CAGE

Data:

Frame 6809-H Type LLD NEMA Design B

Rating:

1250 HP 4000 Volts 151 Amperes
3571 RPM 3 Phase 60 Hertz

Locked Code Letter F

Characteristics:

Enclosure W.F.

Duty CONTINUOUS

Rotation C.C.W.

Ambient Temperature 50°C.

Temperature Rise 70°C.

Service Factor 1.0

Class of Insulation "B" THERMALASTIC EPOXY

Drive COUPLED

Bearings SPLIT SLEEVE

Lubrication OIL

Mounting HORIZONTAL

Maintenance Instructions 3100-1

Outline Drawing 9509D96

PACKAGE NO. 3-E-1, PAGE OF
SYSTEM Aux. Feedwater
TAG NUMBERS 3M-AFD-P01
REPRODUCED FROM PUNGS OPERATIONS CONTROL No. TM-148A-4
DCN'S N/A
FCR'S N/A

Attachment To
2426-PFR-086

From (W) INSTRUCTION BOOK
PVNGS OPERATIONS CONTROL NO. TM-148A-4
BPC STATUS 1 DATED 10-27-80

2426-PFR-086
Page 7

LACI-2 - Westinghouse Motor Identification

G.O. PO-71420-L7 I.B. S.O. 77F14411

Customer BINGHAM-WILLAMETTE COMPANY

Motor S.O. 77F14408 - 77F31107 - 77F31108

Application AUXILIARY FEEDWATER PUMP MOTORS

A.C. Motor SQUIRREL CAGE

Data:
Frame 6809-H Type LLD NEMA Design B

Rating:
1250 HP 4000 Volts 151 Amperes
3571 RPM 3 Phase 60 Hertz

Locked Code Letter F

Characteristics:

Enclosure W.F.

Duty CONTINUOUS

Rotation C.C.W.

Ambient Temperature 50°C.

Temperature Rise 70°C.

Service Factor 1.0

Class of Insulation "B" THERMALASTIC EPOXY

Drive COUPLED

PACKAGE NO. 2-E1, PAGE OF
SYSTEM Auxiliary Feedwater
TAG NUMBERS 1H-AFP-POI
REPRODUCED FROM PVNGS OPERATIONS CONTROL NO TM 14 BA-4
DCN'S N/A
FCR'S N/A

TORREY PINES TECHNOLOGY
ARIZONA PUBLIC SERVICE-PVNGS

Attachment to
2426-PFR-086

IMPACT ASSESSMENT

PFR NO. 2426-PFR-086 REVISION Issue A

AFFECTED ITEM:

01M-AFB-P01 (Unit 1); 02M-AFB-P01 (Unit 2); 03M-AFB-P01 (Unit 3)

A. PREPARATION BY GA INITIATOR:

1. WHICH OF THE FIRST TWO POTENTIAL FINDING CLASSIFICATION CRITERIA APPLIES TO THIS PFR?

Neither

1 ☐, 2 ☐,

2. IN WHAT WAY MIGHT A SUBSTANTIAL SAFETY HAZARD BE CREATED AS A RESULT OF THE VIOLATION, DISCREPANCY OR ERROR (IF 1 OR 2 ABOVE WAS CHECKED)?:

N/A

3. OTHER COMMENTS: There is disagreement between the motor frame designation on the data sheet and the motor frame designation on the motor nameplate. APS states the motor data sheet is incorrect. It is recommended this PFR be classified to an "Observation".

PREPARED BY: R. BenhamDATE: 10-11-82

B. PREPARATION BY GA TASK LEADER:

1. COMMENT ON ABOVE REPLIES:

*Concur with Initiator's impact assessment.
No safety impact.*

2. DOES EVIDENCE EXIST OF MULTIPLE SIMILAR VIOLATIONS, DISCREPANCIES OR ERRORS? IF SO, LIST RELEVANT PFR NO'S:

See Item 5 below

3. IF POTENTIAL FINDING CLASSIFICATION CRITERIA 3, 4, OR 5 APPLIES, STATE WHICH ONE:

3 ☐, 4 ☐, 5 ☐*N/A*

4. WHAT IS YOUR JUDGEMENT OF THE LIKELIHOOD OF MULTIPLE SIMILAR VIOLATIONS, DISCREPANCIES OR ERRORS ACTUALLY CREATING A SUBSTANTIAL SAFETY HAZARD - AND OF WHAT NATURE?

Not likely

5. OTHER COMMENTS:

There are other mistagged items, but this is the only one on a motor frame that was noted in the walkdown.

PREPARED BY: *[Signature]*DATE: 10/11/82

POTENTIAL FINDING REPORT
PVNGS QUALITY ASSURANCE VERIFICATION

PFR NO. 2426-PFR -087 ^{Issue} REVISION A

A. PREPARATION BY GA INITIATOR

AFFECTED ITEMS:

Safety Injection & Shutdown Cooling System. Shutdown Heat Exchanger Outlet Temperature (TE-303Y, TY-303Y, TI-303Y)

REQUIREMENT REFERENCE DOCUMENTS:

1. CESSAR Vol 3 Sect. 6.3 Emergency Core Cooling System
2. CESSAR Vol 5. Sect. 7.0 Instrumentation & Controls

BASIC REQUIREMENT:

1. Ref. 1 Table 6.3.2.3 (Safety Related Process Instrumentation) States that the temperature system has a post-accident function to monitor shutdown cooling heat exchanger performance to an accuracy of $\pm 2.5\%$.
(see page 1A)

DESCRIPTION OF POTENTIAL FINDING:

See Page 1A

PREPARED BY: A. Middleron Alan Middleton DATE: 9/24/82

USE THE SPACE BELOW TO DOCUMENT ANY RE-REVIEW ACTION TAKEN BY INITIATOR ON THIS PFR.

SIGNATURE: _____ DATE: _____

Basic Requirement

2. Ref. 2 Table 7.5-2 (Engineered Safety Feature System Monitoring) Shutdown cooling heat exchanger outlet temperature shall be monitored in the control room to an accuracy of $\pm 2.5\%$.

Description of Potential Finding

Resistance/voltage converter (TY-303Y) per CE Spec No. 14273-ICE-40005, Rev. 02 is a Foxboro Model No. 2A1-P2V (ECEP 9808). Temperature element (TE-303Y) per CE Spec. No. 14273-ICE-40120, Rev. 01, is a RDF Co platinum resistance element with resistance temperature characteristics of $\alpha = .00392 \Omega/\Omega/^{\circ}\text{C}$. Foxboro resistance/voltage converters model no. 2A1-P2V generally are designed for platinum resistance elements with resistance temperature characteristics of $\alpha = .00385 \Omega/\Omega/^{\circ}\text{C}$. There is no documentation currently available from Foxboro or CE to ensure that during site calibration (initial and recalibration) of the resistance/voltage converter that the correct resistance/temperature curves (i.e. $\alpha = .003923 \Omega/\Omega/^{\circ}\text{C}$) are used.

It is therefore, likely that the resistance/voltage converter is calibrated using the resistance temperature curves which Foxboro normally supply with their maintenance and calibration instruction manual (i.e. $\alpha = .00385 \Omega/\Omega/^{\circ}\text{C}$). If the wrong curve ($\alpha = .00385 \Omega/\Omega/^{\circ}\text{C}$) is used during calibration and then the RDF Co. resistance element ($\alpha = .00392 \Omega/\Omega/^{\circ}\text{C}$) is reconnected; the temperature indication could be high by as much as 16°F at the maximum temperature of the operating range (i.e. 400°F). This would be an error of 4% and would be outside the specified accuracy requirements.

B. REVIEW BY GA TASK LEADER

PFR NO. 2426-PFR - 087

REVISION ^{Issue} A

☐ REQUEST RE-REVIEW

BY: _____ DATE: _____

REASONS:

☒ AGREE PF IS VALID ~~INVALID~~

☐ DISAGREE WITH INITIATOR

REASONS:

BY: Bopla Jr DATE: 9/24/82

BY: _____ DATE: _____

C., D. SEE ATTACHED SECTIONS C AND D (PAGE 3)

E. RECOMMENDATION BY FINDINGS REVIEW COMMITTEE

ADDITIONAL INFORMATION REQUIRED

DEFINITION: ☒ ADEQUATE ☐ INADEQUATE

VALIDITY: ☐ VALID ☒ INVALID

CLASSIFICATION: ☐ OBSERVATION ☐ FINDING

JUSTIFICATION

CLASSIFICATION CRITERION NO. RESULTING IN "FINDING" _____

COMMENT ON "OBSERVATION" OR "FINDING" CLASSIFICATION:

BY: S. L. Koutz DATE: 10/7/82 BY: _____ DATE: _____

F. GA PROJECT MANAGER

☒ ACCEPT

☐ REJECT

BY: [Signature] DATE: 10-7-82

C. REVIEW BY ORIGINAL DESIGN ORGANIZATION

PFR NO. 087

REVISION A

☒ ~~AGREE~~ ☒ DISAGREE THAT POTENTIAL FINDING IS ACCURATEBY: Glen R. McCay DATE: 10-1-82

IF THE "DISAGREE" BLOCK WAS CHECKED, USE THE SPACE BELOW TO PROVIDE INFORMATION THAT WOULD IMPROVE ACCURACY OR DEFINITION. (USE BACK FOR ADDITIONAL SPACE.)

The information concerning the resistance/temperature characteristics curves of resistance/voltage converter (TY-303Y) presented in the description of the potential finding is incorrect. TY-303Y is a Foxboro Converter Model No. 2AI-P2V ECEP 9808 designed specifically with a Rosemount "Heavy Duty" resistance/temperature curve which closely matches the characteristic curve of the RdF Corp. Resistance Temperature Detector (RTD), TE-303Y.

Therefore it is not likely that the temperature mismatch posed in the Description of Potential Finding will occur.

The appropriate Foxboro Technical Information sheets for converter model 2AI-P2V ECEP 9808, including the appropriate resistance/temperature characteristic curve, are provided as attachments to letter V-CE-17170 from C. Ferguson to W. A. Simon, dated October 1, 1982.

D. REVIEW BY GA INITIATOR

☒ AGREE PF IS INVALIDREASON: SEE PAGE 4BY: Alan Middleton DATE: 10/6/82

REVIEW BY GA TASK LEADER

☒ AGREE PF IS INVALIDREASON: Concur with Initiator's recommendation to invalidate this PFR based on additional information provided by CE.BY: [Signature] DATE: 10/6/82

Attachment

Initial information received from CE did indicate that resistance voltage converter TY-303Y was Foxboro standard model 2A1-P2V.

Upon review of Foxboro Standard Calibration Procedures (MI-2A1-183 Sept. 1973 and MI-2A1-185 Feb. 1975) and temperature resistance data for RDF Co. RTD (CE Doc. 14273-ICE-40120 Rev. 1), it appeared there was a potential calibration problem which could lead to an inaccuracy of up to 16°F (in 400°F max. operating temperature). This would be outside the FSAR accuracy requirement of $\pm 2.5\%$.

Additional information received from CE and Foxboro indicated that the resistance voltage converter is specifically designed for use with a 200 ohm RTD (2A1-P2V-ECEP 9808).

Initially the Foxboro resistance/voltage converter had been designed to work with a "Rosemount" (200 ohm) RTD. When it was found that "Rosemount" RTDs were not available and a RDF Co. 200 ohm probe was substituted, CE and Foxboro were careful to match the RDF Co's resistance temperature curve and Foxboro's resistance/voltage converter (2A1-P2V-ECEP 9808).

I am now satisfied that the temperature measuring system will give accurate temperature indication, and within FSAR accuracy requirements. This PFR-087 Rev. A is now invalid.

A.M.
10/6/82

C-E Power Systems
Combustion Engineering, Inc.
1000 Prospect Hill Road
Windsor, Connecticut 06095

Tel. 203/688-1911
Telex: 99297



PFR-087
pg. 5

RECEIVED
W. A. SIMON

October 1, 1982
V-CE-17170

OCT 4 1982

Mr. Walter A. Simon
Project Manager
Torrey Pines Technology
10955 John J. Hopkins Drive
San Diego, CA 92121

COPIES _____
ROUTE _____
FILE _____

Subject: Potential Finding Report No. 2426-PFR-087, Issue A

Reference: Letter from W. A. Simon to C. Ferguson,
Independent QA Evaluation of PVNGS: TPT:159:WAS:82
Potential Finding Report No. 2426-PFR-087
dated September 24, 1982

- Attachments: 1) Foxboro Technical Information Manual, TI-2AI-180, for
Resistance Converter Model No. 2AI-P2V, dated August, 1977
2) Foxboro Instruction Manual, SI-1-01350, for Resistance
Converter 2AI-P2V (ECEP-9808)
3) Rosemount "Heavy Duty" Resistance Converter Curve No. 2RE-
184

Enclosed is the subject Potential Finding Report (PFR) with Section C completed
as requested by the Reference. The attached pages from the Foxboro Instruction
Manual are cited in our response to the PFR as providing the correct
information necessary for evaluation of Resistance Converter TY-303Y.

Very truly yours,

COMBUSTION ENGINEERING, INC.

C. Ferguson
C. Ferguson
Project Manager

CF/TPB/cw

cc: E. E. Van Brunt, Jr. w/o att.

Technical Information

TI
2AI-180
August 1977

RESISTANCE CONVERTER

PFR-087.
pg. 6.

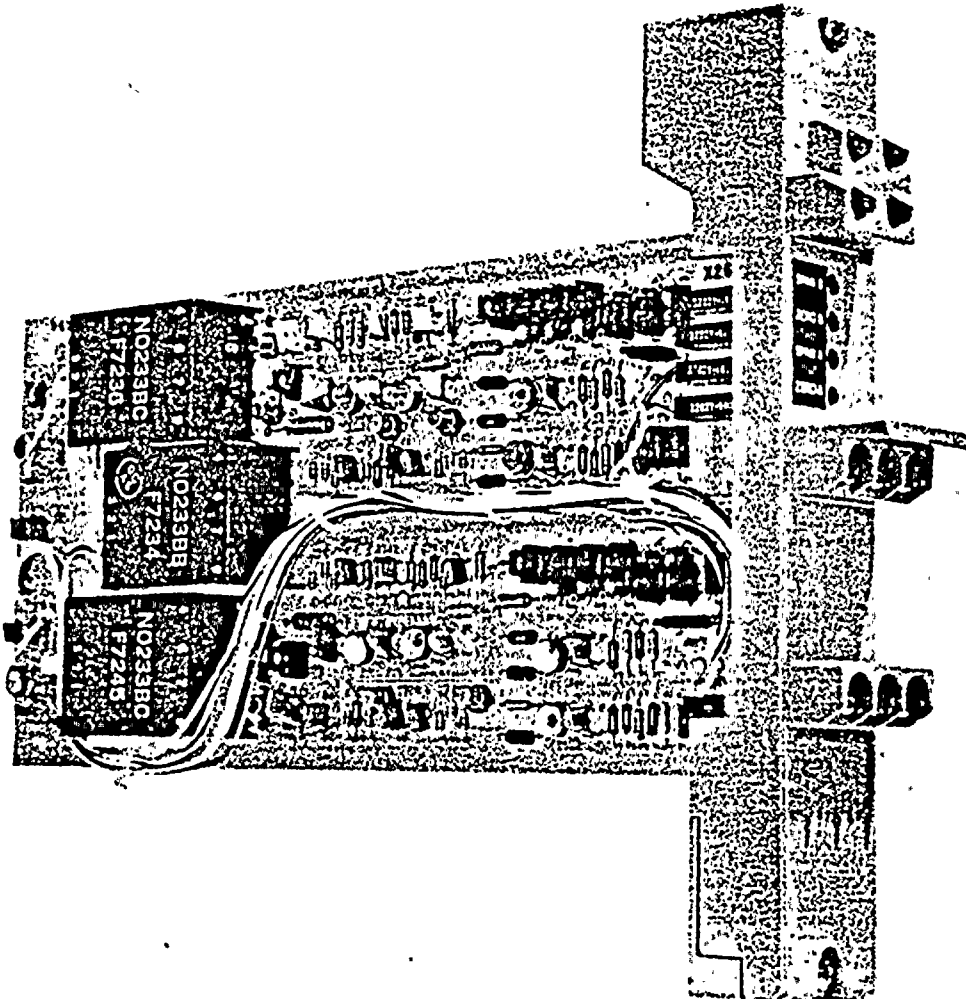


Figure 1. SPEC 200[®] Resistance Converter

GENERAL

The SPEC 200 resistance converter, shown in Figure 1, produces an output signal of 0 to 10 volts dc proportional to a range of temperature as measured by RTD (resistance bulb) sensors. Two versions are available. One is for nickel sensors, and the other is for platinum sensors. The converter can be calibrated for most other RTD materials, but this could result in changes of the specifications listed on page 2.

Each SPEC 200 resistance converter circuit card is a dual unit; two independent converter circuits are provided. Temperature difference termination modules can be added to either or both of these circuits. Either or both can receive a signal from a pair of RTD sensors and have a 0 to 10 volt dc output proportional to temperature difference. The SPEC 200 resistance converter provides input-to-output isolation.

[®]Registered Trademark

FOXBORO
Temperature Measurement Systems

PFR-087
pg. 7

SPECIFICATIONS

Model Number:
2AI-N2V (for nickel RTD sensors)
-P2V (for platinum RTD sensors)
+DR (temperature difference termina-
tion module added)
+SLW (slidewire termination module
added)

Mounting:
Occupies 1 space in SPEC 200 nest (see TI 200-275)

Electrical Classification: Ordinary locations

Intrinsic Safety:

Certified units for use in intrinsically safe systems
are specified by adding appropriate suffix to Model
Number as follows:

-BGA (BASEEFA, U. K.) refer to TI 200-257
-CGB (CSA, Canada) refer to TI 200-255
-FGB (FM, U. S.) refer to TI 200-255
-PGA (PTB, Germany) refer to TI 200-256

Power Requirements:

+15 V dc $\pm 5\%$ at 40 mA maximum
-15 V dc $\pm 5\%$ at 30 mA maximum

Input Signals (2 per unit):

Received from nickel or platinum RTD sensors
or from 3 wire potentiometer (slidewire)

Measurement Spans: See Table I

Range Limits: See Table I

Output Signals (2): Each 0 to 10 V dc

Output Load: 2000 ohms minimum

Adjustments:

Fine zero, on front plate
Fine span, on front plate
Coarse zero, jumpers on circuit board
Coarse span, jumpers on circuit board
Reverse output, jumpers on circuit board
Note: Fine zero adjustments 28°C (50°F) with
nickel sensor, 20°C (40°F) with platinum sensor

Accuracy: $\pm 0.5\%$ of span

Linearity: $\pm 0.25\%$ of span

Supply Voltage Variation Effect:

Less than 0.25% of span output change for 5% supply
voltage variation

Ambient Temperature Range: 5 to 50°C (40 to 120°F)

Ambient Temperature Effect:

Less than 0.5% of span for a 25°C (45°F) change
within normal operating limits

Response Time:

2 seconds or less for 90% of final value after 80%
input step change

TABLE I. MEASUREMENT SPANS AND RANGE LIMITS

VARIETY OF CONVERTER	MEASUREMENT SPANS		TEMPERATURE RANGE LIMITS AND ΔT WORKING TEMPERATURE LIMITS (Limited by RTD)	SLIDEWIRE RESISTANCE LIMITS
	TEMPERATURE	TEMPERATURE DIFFERENCE		
-N2V	3°C (5°F) minimum 330°C (600°F) maximum	0 ΔT AT MIDDLE RANGE-VALUE: 3°C (5°F) ΔT minimum, 330°C (600°F) ΔT maximum	-215 and +320°C (-320 and +600°F), Foxboro NR227 or NR226 curve, SAMA Type II	—
		0 ΔT AT LOWER RANGE-VALUE: 3°C (5°F) ΔT minimum, 28°C (50°F) ΔT maximum		
-P2V	6°C (10°F) minimum 650°C (1200°F) maximum	0 ΔT AT MIDDLE RANGE-VALUE: 6°C (10°F) ΔT minimum, 28°C (50°F) ΔT maximum	-200 and +650°C (-330 and +1200°F), Foxboro PR238 or NR278 curve, SAMA 100 ohm	—
		0 ΔT AT LOWER RANGE-VALUE: 6°C (10°F) ΔT minimum, 650°C (1200°F) ΔT maximum		
+SLW	—	—	—	100 ohms and 100 kilohms

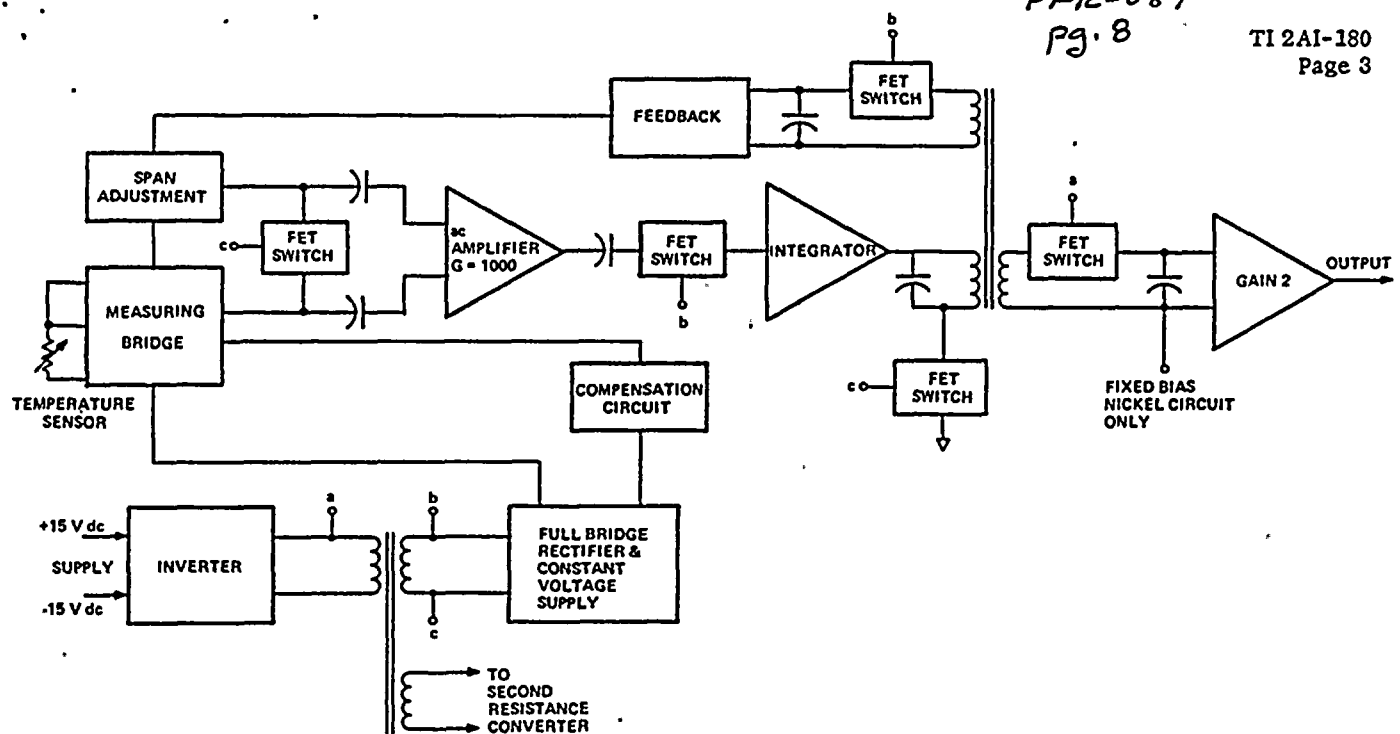


Figure 2. Simplified Single Circuit Diagram of SPEC 200 Resistance Converter

PRINCIPLE OF OPERATION

The three wire nickel or platinum RTD sensors connect to the SPEC 200 resistance converter to complete each bridge circuit. The converter for the nickel RTD is energized by a constant voltage supply. The bridge is adjusted to be balanced at the middle range-value. Therefore, the bridge output goes through a plus-and-minus millivolt excursion as the measurement goes through the calibrated range of measurement. The bridge output is a linear function of measured temperature.

The converter for the platinum RTD is also energized by a constant voltage supply. This bridge is adjusted to be balanced at the lower range-value. With constant current through the sensor, the bridge output linearity would approximate that of the platinum RTD temperature/resistance curve. A specially designed circuit senses RTD and cable resistance and produces a linear temperature measurement signal as well as compensation for cable resistance changes.

Figure 2 is a simplified single circuit diagram of the dual SPEC 200 resistance converter. The output of the measuring bridge and the span adjusted feedback are summed in series. The resultant signal is chopped with an FET switch and applied to the differential terminals of an ac amplifier. At any steady state condition, the algebraic sum of the voltages in this series circuit is effectively zero. The feedback signal (input to the span adjustment circuit) is -2.5 to +2.5 volts for the nickel RTD circuit or 0 to +5 volts for the platinum RTD circuit. This span circuit allows adjustment of the feedback signal to set the span of measurement.

An inverter circuit generates a 2 kHz signal. This ac signal serves as the trigger for the several FET switches in the circuit. A pair of secondary windings couples this signal to both of the resistance converter circuits in this dual arrangement to achieve input isolation between circuits. The ac signal is rectified to dc by a full bridge rectifier to supply the integrated circuits used in the input portion of the converter. A Zener diode is operated at fixed current to provide an extremely stable voltage to the measuring bridge. This voltage can be modified by the special lead resistance sensing circuits.

The output of the ac amplifier is demodulated by an FET switch. The resultant rectangular wave signal is applied to an integrator. The voltage output of the integrator charges the primary of the output transformer through an FET switch. The FET switches (in the transformer secondaries) are OFF and not conducting during the charging time.

When the primary switch is turned OFF, the secondary switch is turned ON. The primary energy is coupled in to the secondaries and charges the respective capacitors. Filtering is done in the feedback stage and in the input to the output amplifier. This produces a dc voltage proportional to the resistance converter bridge output signal and, in turn, proportional to the temperature measurement. The output amplifier applies a gain of two to this feedback signal and achieves an output of 0 to 10 volts dc. In the nickel RTD circuit, a fixed bias is also added at the output stage.

Instruction

Supporting Literature

MI 2AI-185

SI

1-01350

March 1977

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pg. 9

CUSTOM MODEL 2AI-P2V CONVERTER FOR USE WITH PLATINUM BULBS HAVING OTHER THAN 100 OHMS RESISTANCE (ECEP-9808)

General

Custom Model 2AI-P2V Converters specified by ECEP-9808 are modified for use with platinum resistance bulbs having other than 100 ohms nominal resistance. The modification consists of changing the value of the linearity resistors R11 and R53. In some cases it may be necessary to also change the value of certain resistors in the binary chain (R45 and R88).

To calculate R11/R53 for ranges using bulbs other than the 100 ohm platinum, the following formula is used:

$$RN = \frac{R0^2/R50 + R50^2/R100 - 2R0R100}{R0 + R100 - 2R50}$$

$$R11 = R53 = -28(RN)$$

Where: R0, R50, R100 refer to the value of the resistance at 0%, 50%, and 100% of the span in use on the curve.

Example:

Curve PR-239

$^{\circ}\text{C}$	R from Curve
-220	R0 = 10.41 ohm
+165	R50 = 162.92 ohm
+550	R100 = 297.30 ohm

$$RN = -2423.736$$

$$R11 = R53 = -28(RN) = 67.865 \text{ K ohm}$$

The standard R11/R53 resistors may now be replaced by those with the calculated value and the unit calibrated following the standard procedure as described in MI 2AI-185. Except for the above changes, the operation of this custom unit is the same as the standard, refer to MI 2AI-185.

- NOTE: 1. There may be curves that require the value of R45/R88, and R44/R87 to be changed to 256 ohms (E0286ED), to obtain the desired zero elevation, and R101/107 changed to 511 ohms (E0132PT) for desired span adjustment.
2. For curves that require bulb resistance greater than 350 ohms change R48/R52 to 374K (E0145NZ) and double the value of R35/36, and R74/81. (Place 2-665K (1/2 of E0286CS) in series.)

RMP:mes-- 200

FOXBORO

SPEC 200 RESISTANCE CONVERTERCURVE NO. 2RE-184

Per ECEP-9808

Rosemount
 $\alpha = .0039$

IC102RE

SHEET 184

DATE: 1/25/7

ENG. DMD

REV. 1

RANGE: 40 to 400 F

MODEL NO. 2AI -PZV:

SOURCE OF DATA: Dwg. IC76YC, sheet 20
M/104 Rosemount Heavy Duty
except for 200 OHM blub.
Multiply values by 2.

% SCALE	TEMPERATURE (F)	RESISTANCE (OHMS)
0	40 4.4	101.76 203.52 203.54 ⁰²
25	130 56.4	121.41 242.82 243.02 ²⁰
50	220 104.4	140.77 281.54 281.32 ¹²
75	310 154.4	159.83 319.66 320.18 ⁵
100	400 204.4 ✓	178.60 357.20 357.88 ⁶⁸

2AI-PZV ↗

R11 = ¹⁴³127K (EO143LK) FOR CHANNEL A

R53 = 127K (EO143LK) FOR CHANNEL B

S.O. 76X-60759-146SHEET 184

DWG. NO. IC102RE

POTENTIAL FINDING REPORT
PVNGS QUALITY ASSURANCE VERIFICATION

PFR NO. 2426-PFR 088 REVISION Issue A

A. PREPARATION BY GA INITIATOR

AFFECTED ITEMS:

As-Built Log.

REQUIREMENT REFERENCE DOCUMENTS:

Bechtel Project 10407 IP-4.33, Rev. 4, entitled,
"As-Built Records."

BASIC REQUIREMENT:

Last sentence in Sec. 2.0 states, "The As-Built Log entries show:

- d. For selected configuration control conditions which are not covered by other procedures or programs, Construction Inspection Plans (CIPs) are logged against base drawings or specifications to provide a description of the work and the particular design documents in effect when the installation was completed."

DESCRIPTION OF POTENTIAL FINDING:

The following CIPs are not listed in the As-Built Log, dated 8/23/82:

(Continued on page ⁴/₅)

PREPARED BY: W. P. Malay

DATE: 9/17/82

USE THE SPACE BELOW TO DOCUMENT ANY RE-REVIEW ACTION TAKEN BY INITIATOR ON THIS PFR.

SIGNATURE: _____ DATE: _____

B. REVIEW BY GA TASK LEADER

PFR NO. 2426-PFR 088

REVISION Issue A

☐ REQUEST RE-REVIEW

BY: _____ DATE: _____

REASONS:

☒ AGREE PF IS VALID/INVALIDBY: J. Buerre DATE: 9/17/82☐ DISAGREE WITH INITIATOR

BY: _____ DATE: _____

REASONS:

C., D. SEE ATTACHED SECTIONS C AND D (PAGE 3)

E. RECOMMENDATION BY FINDINGS REVIEW COMMITTEE

ADDITIONAL INFORMATION REQUIRED

DEFINITION: ☒ ADEQUATE ☐ INADEQUATEVALIDITY: ☒ VALID ☐ INVALIDCLASSIFICATION: ☒ OBSERVATION ☐ FINDING

JUSTIFICATION

CLASSIFICATION CRITERION NO. RESULTING IN "FINDING" _____

COMMENT ON "OBSERVATION" OR "FINDING" CLASSIFICATION:

Procedural violation with no safety impact since the configuration control info is entered into the As Built Log by another means.

BY: S. A. Koutz DATE: 10/5/82

BY: _____ DATE: _____

F. GA PROJECT MANAGER

☒ ACCEPT☐ REJECTBY: MA Buerre DATE: 10-5-82

C. REVIEW BY ORIGINAL DESIGN ORGANIZATION

PFR NO. 088

REVISION A

☐ AGREE ☒ DISAGREE THAT POTENTIAL FINDING IS ACCURATEBY: [Signature] DATE: 2/24/82

IF THE "DISAGREE" BLOCK WAS CHECKED, USE THE SPACE BELOW TO PROVIDE INFORMATION THAT WOULD IMPROVE ACCURACY OR DEFINITION. (USE BACK FOR ADDITIONAL SPACE.)

A review of the referenced CIP's has resulted in the following dispositions:

Item 1. Containment Liner Plate Installation:

These particular CIPs were not included in the selected group of CIP's which were to be included in the As-Built Log (See IP-4.33).

Item 2. Containment Building:

This CIP is included in the As-Built Log, however, drawing 13-C-ZCS-108 is incorrectly listed as 13-C-ZCS-118. This is evaluated as a typographical error.

Items 3 thru 7. Shutdown Cooling HX, Containment Spray Pump, and Pressurizer:

These CIPs are applicable to equipment installations. The project has not yet included any equipment installation related CIPs into the As-Built Log. This information is being accumulated for input at a later time.

Item 8. Installation of Circulating Water Pipe

(Same as 1)

Currently the use of CIPs in the As-Built Log is under review. It is anticipated that CIP's will be treated as a separate item not directly included in the As-Built Log. CIP's provided redundant information with the other source documents used as the input for this log.

D. REVIEW BY GA INITIATOR

☐ AGREE PF IS INVALID REASON:

BY: _____ DATE: _____

REVIEW BY GA TASK LEADER

☐ AGREE PF IS INVALID REASON:

BY: _____ DATE: _____

POTENTIAL FINDING REPORT (CONT'D)

PFR NO. 088

Issue A
REVISION

PREPARED BY GA INITIATOR/TASK LEADER

PAGE NO. 4

1. Q7038
Q7039 Containment Liner Dwgs. 13-C-ZCS-205,
Q7040 Plate Installation -206, -207, -210
Q7041
2. Q04451 Containment Building Dwgs. 13-C-ZCS-108
3. Q59042 Shutdown Cooling Hx Dwgs. 13-P-SIF-207, -208
13-M-SIP-001
4. Q54344 Shutdown Cooling Hx Dwgs. 13-P-SIF-207, -208
5. Q19138 Containment Spray Pump Dwg. 13-P-ZAL-201
Casing Installation
6. Q22309 — Dwgs. 13-P-ZAL-203
13-P-SIF-208
13-M-SIP-001
13-C-ZAS-122
13-C-ZAS-241
7. Q19751 Pressurizer Dwgs. 13-C-ZCS-378, -604
13-P-RCF-101, -114
8. 2 CIPs
unidentified CIPs are titled, "Checklist for Installation
as to Q number of Circulating Water Pipe (WP/P-QCI 202.2)

General Atomic Company

QUALITY ASSURANCE DEPARTMENT

Record of Long Distance Telephone Call

PFR-088

Pg. 5

Party: Called ☐
Calling ☒

Date: 10/5/82

Time: Completed _____

Name Mr. Ken Swertnik

Started _____

On-line _____

Company Bechtel, Downey

Location _____

Telephone No: A/C 213 No. 862-8631 x 400

Discussion

I called Mr. Ken Swertnik for understanding
of the Bechtel (Original Design Organization)
response to my (Initiator) PFR, No. 088

Item 1 It was pointed out that the CIP's in question
referenced WPP/QCI 61.0 which is listed on
Pg 1 of the Exhibit to IP 4.33. The CIP's there-
fore require listing in the As-Built Log. It
was agreed between ODO & Initiator.

" 2 The -108 drawing is incorrectly listed
on the CIP.

3 thru 7 The CIP's were not inputted as yet.

Item 8 Same as Item 1 except WPP/QCI
identification is 202.2

It was agreed that the "Agree" Block
should be now checked in Section C.

Record Made by W.P. Malay

Distribution:

IMPACT ASSESSMENT

PFR NO. 2426-088 REVISION Issue A

AFFECTED ITEM:

As-Built Log (ABL)

A. PREPARATION BY GA INITIATOR:

1. WHICH OF THE FIRST TWO POTENTIAL FINDING CLASSIFICATION CRITERIA APPLIES TO THIS PFR?

Neither. 1 ☐, 2 ☐,

2. IN WHAT WAY MIGHT A SUBSTANTIAL SAFETY HAZARD BE CREATED AS A RESULT OF THE VIOLATION, DISCREPANCY OR ERROR (IF 1 OR 2 ABOVE WAS CHECKED)?:

N/A

3. OTHER COMMENTS: The net result of this PFR is that it documents a procedural deviation, viz; certain CIPs should have been listed in the ABL and were not. The need for CIPs to be in the ABL, in the first place, is not seen to be necessary as stated in the "Conclusions" section of the TPT Summary Report. CIPs are considered to be a work authorizing document and contain the record of inspection of the work.

PREPARED BY: W.P. Malay DATE: 10/5/82

B. PREPARATION BY GA TASK LEADER:

1. COMMENT ON ABOVE REPLIES:

Agree with above.

2. DOES EVIDENCE EXIST OF MULTIPLE SIMILAR VIOLATIONS, DISCREPANCIES OR ERRORS? IF SO, LIST RELEVANT PFR NO'S:

NONE

3. IF POTENTIAL FINDING CLASSIFICATION CRITERIA 3, 4, OR 5 APPLIES, STATE WHICH ONE:

NONE

3 ☐, 4 ☐, 5 ☐

4. WHAT IS YOUR JUDGEMENT OF THE LIKELIHOOD OF MULTIPLE SIMILAR VIOLATIONS, DISCREPANCIES OR ERRORS ACTUALLY CREATING A SUBSTANTIAL SAFETY HAZARD - AND OF WHAT NATURE?

UNLIKELY.

5. OTHER COMMENTS: *No substantial safety hazard would result from this. The as-built log serves as a historical document. It is not used as a source in plant construction.*

PREPARED BY:

J. B. ...

DATE:

10/5/82

IMPACT ASSESSMENT

PFR NO. 2426-088 REVISION Issue B

AFFECTED ITEM:
As-Built Log (ABL)

A. PREPARATION BY GA INITIATOR:

1. WHICH OF THE FIRST TWO POTENTIAL FINDING CLASSIFICATION CRITERIA APPLIES TO THIS PFR?

Neither. 1 ☐, 2 ☐,

2. IN WHAT WAY MIGHT A SUBSTANTIAL SAFETY HAZARD BE CREATED AS A RESULT OF THE VIOLATION, DISCREPANCY OR ERROR (IF 1 OR 2 ABOVE WAS CHECKED)?:

N/A

3. OTHER COMMENTS: This PFR documents a procedural deviation in that certain CIPs should have been listed in the ABL and were not. The need for CIPs to be in the ABL is not seen to be necessary because the referenced design documents and changes thereto (e.g., FCR, DCN) are already entered in the ABL.

PREPARED BY: W.P. Malay DATE: 10/5/02

B. PREPARATION BY GA TASK LEADER:

1. COMMENT ON ABOVE REPLIES:

Agree with above

2. DOES EVIDENCE EXIST OF MULTIPLE SIMILAR VIOLATIONS, DISCREPANCIES OR ERRORS? IF SO, LIST RELEVANT PFR NO'S: NONE

3. IF POTENTIAL FINDING CLASSIFICATION CRITERIA 3, 4, OR 5 APPLIES, STATE WHICH ONE:

NONE

3 ☐, 4 ☐, 5 ☐

4. WHAT IS YOUR JUDGEMENT OF THE LIKELIHOOD OF MULTIPLE SIMILAR VIOLATIONS, DISCREPANCIES OR ERRORS ACTUALLY CREATING A SUBSTANTIAL SAFETY HAZARD - AND OF WHAT NATURE?

Unlikely.

5. OTHER COMMENTS:

No substantial safety hazard would result from this. Configuration control information in the CIP is redundant with information already required to be on the ABL.

PREPARED BY: J. B. ... DATE: 10/5/02

POTENTIAL FINDING REPORT
PVNGS QUALITY ASSURANCE VERIFICATION

PFR NO. 2426-PFR -089 REVISION B

A. PREPARATION BY GA INITIATOR

AFFECTED ITEMS:

1. Valve 1PSIBVO74 (Unit 1)
2. Auxiliary Feedwater Pump (motor-driven) 1M-AFB-PO1 (Unit 1)

REQUIREMENT REFERENCE DOCUMENTS:

1. Manufacturer's Code Date Sheet
2. Bingham Wilamette Dwg. 16084X, Rev. 5
3. Purchase Specification 13-PM-221

BASIC REQUIREMENT: Valves and equipment shall be affixed with permanent data and/or code identification tags per specification 13-PM-221

DESCRIPTION OF POTENTIAL FINDING:

1. Code data tag on 1PSIBVO74 is missing
 2. Manufacturer's identification and data tag is missing on Pump 1M-AFB-PO1
- NOTE: Both of these items have been turned over for startup

PREPARED BY: R. D. Phelps

DATE: 10-13-82

USE THE SPACE BELOW TO DOCUMENT ANY RE-REVIEW ACTION TAKEN BY INITIATOR ON THIS PFR.

SIGNATURE: _____

DATE: _____

B. REVIEW BY GA TASK LEADER

PFR NO. 2426-PFR

- 089

REVISION

B

☐ REQUEST RE-REVIEW

BY: _____

DATE: _____

REASONS:

☒ AGREE PFR IS VALID/~~INVALID~~BY: F. S. K. R.DATE: 10/13/82☐ DISAGREE WITH INITIATOR

BY: _____

DATE: _____

REASONS:

Revision B retains Items b & c of Issue A as valid. Items a, d, e have been invalidated based on additional information provided by APS in response to Issue A of the PFR.

C., D. SEE ATTACHED SECTIONS C AND D (PAGE 3)

E. RECOMMENDATION BY FINDINGS REVIEW COMMITTEE

ADDITIONAL INFORMATION REQUIRED

DEFINITION:

☒ ADEQUATE☐ INADEQUATE

VALIDITY:

☒ VALID☐ INVALID

CLASSIFICATION:

☐ OBSERVATION☒ FINDING

JUSTIFICATION

CLASSIFICATION CRITERION NO. RESULTING IN "FINDING" 2

COMMENT ON "OBSERVATION" OR "FINDING" CLASSIFICATION:

Because of missing code tag on valve there is no proof that the installed valve is code approved.

BY: S. L. K. R.DATE: 10/13/82

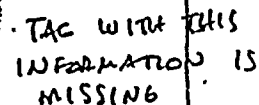
BY: _____

DATE: _____

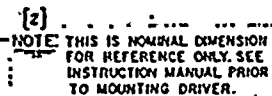
F. GA PROJECT MANAGER

☒ ACCEPT☐ REJECTBY: [Signature]DATE: 10-13-82

PER DWG
B-33210



ENG. TO PROVIDE WITH EACH PUMP
A MINIMUM FLOW ORIFICE TO
BY-PASS 135 G.P.M. SEE ORIFICE
OUTLINE DWG. 8-33578.



13425

ATTACHMENT 3
2426-PR2-083-*

For every (b)(1) change of balance starting this 1st point in time, the Controller's Unit should be followed at least every 1000 points.

16084X

TORREY PINES TECHNOLOGY
ARIZONA PUBLIC SERVICE—PVNGS

PACKAGE NO. 1-M8, PAGE 4 OF 7
SYSTEM AUXILIARY FEEDWATER PUMP
TAG NUMBERS 1M AFB-P01
REPRODUCED FROM 13-MM-021
DCN'S NONE APPLY
FCR'S NONE APPLY

TORREY PINES TECHNOLOGY
ARIZONA PUBLIC SERVICE—PVNGS

PART (C)
13-MM-021
ATTACHMENT 3
2426 PFR-089 #
Page 5

Material

AISI 440A

ASTM A-296 CA6NM

NA

ASTM A-193-B6/A-194-2H

Terry Spec EM-17

NA

ASTM A216-WCB

Terry Spec EM-15

ASTM A276

ASTM A216-WCB

Stainless Steel

Sheet Metal Lagging

Powerhouse Molded Insulation

1-1/2-2-1/2

g. Pump Diffusers

h. Casing Bolts/Studs

5B.3.3 Turbine

a. Turbine Rotor

b. Turbine Blades

c. Turbine Casing

d. Turbine Shaft

e. Steam Inlet Nozzle

f. Steam Exhaust Nozzle

g. Steam Strainer

h. Insulation Material:

Type

Thickness, in.

5B.4 PERFORMANCE DATA

The Supplier shall submit the following performance data:

5B.4.1 Pump Performance

a. Pump Capacity, gal/min

b. Total Differential Head, ft

OR RATED TOTAL DEVELOPED HEAD

c. Pump Speed, r/min, rated

d. Guaranteed Pump Efficiency, Percent

e. Pump rated BHP (at 1.0 Sp. Gr.)

f. Shutoff Head, ft

ALSO USED FOR DATA SHEET
INFORMATION SEE PAGE 3A

875-135-1010

Q-3175

R-3000

3560

78.5

Q-1032

R-975

3750

THIS INFORMATION
WAS IN ADVANTAGE
YELLOWED OUT, IT IS
ALSO ON THE TAG THE
IS MISSING.

INFORMATION IS NOT
REQUIRED TO BE
ON A TAG 8/31/02 PFR

POTENTIAL FINDING REPORT
PVNGS QUALITY ASSURANCE VERIFICATION

pg. 6

PFR NO. 2426-PFR -089 REVISION Issue A

A. PREPARATION BY GA INITIATOR

AFFECTED ITEMS:

- a. Motor operated valve 2JAFB ^{H per} V031 d) valve 3J-S ^{I per} B-HV689
b. Valve 1PSIBV074 e) valve 2P-SGE-V653
c. Aux. Fdwtr Pump (motor driven) 1M-AFB-POL

REQUIREMENT REFERENCE DOCUMENTS:

- a. 13-M-AFP-001 Rev. 10 d) 13-M-SIP-001 Rev. 7
b. Mftr Code Data Sheet e) 13-M-SGP-002 Rev. 6
c. Bingham-Willamette Dwg. 16084X Rev. 5
BASIC REQUIREMENT:

Equipment be identified with a tag
DESCRIPTION OF POTENTIAL FINDING:

- a. Bechtel tag is missing c. Manufacturer tag is missing
b. Code data tag is missing d. Bechtel tag is missing
e. Bechtel tag is missing

(See Attachments 1-5)

PREPARED BY: P. Rasmusson P. Rasmusson DATE: 9/17/82

USE THE SPACE BELOW TO DOCUMENT ANY RE-REVIEW ACTION TAKEN BY INITIATOR ON THIS PFR.

SIGNATURE: _____ DATE: _____

8. REVIEW BY GA TASK LEADER

PFR NO. 2426-PFR

-059

REVISION

A

☐ REQUEST RE-REVIEW

BY: _____ DATE: _____

REASONS:

☒ AGREE PF IS VALID/~~INVALID~~

☐ DISAGREE WITH INITIATOR

REASONS:

BY: FSoper DATE: 9/17/82

BY: _____ DATE: _____

C, D. SEE ATTACHED SECTIONS C AND D (PAGE 3)

E. RECOMMENDATION BY FINDINGS REVIEW COMMITTEE

ADDITIONAL INFORMATION REQUIRED

DEFINITION:

☐ ADEQUATE

☐ INADEQUATE

VALIDITY:

☐ VALID

☐ INVALID

CLASSIFICATION:

☐ OBSERVATION ☐ FINDING

JUSTIFICATION

CLASSIFICATION CRITERION NO. RESULTING IN "FINDING" _____

COMMENT ON "OBSERVATION" OR "FINDING" CLASSIFICATION:

BY: _____ DATE: _____

BY: _____ DATE: _____

F. GA PROJECT MANAGER

☐ ACCEPT

☐ REJECT

BY: _____ DATE: _____

C. REVIEW BY ORIGINAL DESIGN ORGANIZATION

PFR NO.

089, pg. 8

REVISION A

☒ AGREE ☐ DISAGREE THAT POTENTIAL FINDING IS ACCURATEBY: U. SchDATE: 10-4-82

IF THE "DISAGREE" BLOCK WAS CHECKED, USE THE SPACE BELOW TO PROVIDE INFORMATION THAT WOULD IMPROVE ACCURACY OR DEFINITION. (USE BACK FOR ADDITIONAL SPACE.)

Tags on valves 3J-SIB-HV689 and 2P-SGE-V653 have been installed. NCR's have been generated for the Auxiliary Feedwater Pump 1M-AFB-P01 and valve 1P-SIB-V074. Work and inspection of installation have not been completed on motor operated valve 2J-AFB-HV31.

D. REVIEW BY GA INITIATOR

☐ AGREE PF IS INVALID

REASON:

BY: _____

DATE: _____

REVIEW BY GA TASK LEADER

☐ AGREE PF IS INVALID

REASON:

BY: _____

DATE: _____

Items a, d, and e of Issue "A" involve valves in Units 2 and 3. Although APS has had Bechtel install tags on 3JSIBHV689 and 2PSGEV653 these need not have been installed at this time. APS's procedure, WP/P-QCI 31.0, Revision 10, Section 7.5.7 requires all components to be properly tagged prior to turnover for startup. Valve 2JAFBHV031 is still in work in Unit 2. For these three items, A PFR related to tagging is invalid.

R. D. Phelps
10-13-82

Ray Forrester

VENDOR: H/BW - HBA

PALO VERDE NUCLEAR GENERATING STATION				NONCONFORMANCE REPORT		NO. <u>MC1438</u> PAGE <u>1</u> OF <u>1</u>	
1. UNIT <u>1</u>	2. MO DAY YR <u>9/30/82</u>	3. DRAWING/PART NO. <u>1M-AFB-P01</u>	REV. <u>N/A</u>	4. ITEM DESCRIPTION <i>(motor driven)</i> <u>Aux Feedwater Pump</u>		5. ITEM LOCATION <u>MSSS-EK 81'</u>	
6. Q CLASS <u>Q</u>	7. STARTUP SYSTEM NO. <u>1AF-01</u> <i>allu</i>	8. SERIAL NO. <u>1A004</u>	9. SUBCONTRACTOR/SUPPLIER/BECHTEL <u>Bingham Willamette/Bechtel</u>		10. P.O. OR SPEC NO. <u>Rev. 15</u>	11. ASME AUTHORIZED INSPECTION REQ'D. <input checked="" type="checkbox"/> YES <input type="checkbox"/> NO	
ITEM	12. DESCRIPTION LIST IN ORDER: NO. PCS., DWG/SPEC REQMT., PRESENT CONDITION			16. FIELD ENGR DECISION	17. <input type="checkbox"/> FIELD RECOMMENDED DISPOSITION <input type="checkbox"/> ENGINEER DISPOSITION REQ'D.		<input type="checkbox"/> ENGINEER CONCURRENCE REQ'D.
1	The manufacture Pump Specification data Plate is missing from the Pump Casing						
13. REPORTED BY: <u>Rdy Gutierrez</u>		15. INSPECTION/VALIDATION/REVIEW DATE		15A. REPORTABILITY EVALUATION: NOT REPORTABLE: <input type="checkbox"/> OR DER NO. _____		REVIEWERS: R/E _____ QA _____ DATE _____	
19. ACCEPTANCE OF REWORK/REPAIR <input type="checkbox"/> QC ENGR _____ <input type="checkbox"/> FIELD ENGR _____				18. DISPOSITION CONCURRENCE PROJ FIELD ENGR _____ GROUP SUPV _____ AUTHORIZED INSPECTOR _____		NUCLEAR GROUP SUPV _____ (IF REQUIRED) DATE _____ PROJ ENGR _____ QA ENGR _____	
14. ASSUMED CAUSE OF DISCREPANCY <u>Unknown</u>							
INITIATOR <u>Rdy Gutierrez</u> DATE <u>9-30-82</u>							

STATUS: AA

VENDOR: HBA

PALO VERDE NUCLEAR GENERATING STATION				NONCONFORMANCE REPORT		NO. <u>PA-4685</u> PAGE <u>1</u> OF <u>1</u>	
1. UNIT <u>1</u>	2. MO DAY YR <u>9/30/82</u>	3. DRAWING/PART NO. <u>13 P-SIF 208</u>	REV. <u>13</u>	4. ITEM DESCRIPTION <u>DRAIN VALVE LINE 1-SI-119</u> <u>1 P-SIBV-074 1"</u>	5. ITEM LOCATION <u>CONT. SPRAY PUMP AUX. 56' EL.</u> <u>TRAIN B.</u>		
6. Q CLASS <u>Q1B</u>	7. STARTUP SYSTEM NO. <u>1-51-08</u>	8. SERIAL NO. <u>H-302 AAC</u>	9. SUBCONTRACTOR/SUPPLIER/BECHTEL <u>BECHTEL</u>		10. P.O. OR SPEC NO. <u>13 PM 204</u>	11. ASME AUTHORIZED INSPECTION REQ'D. <input checked="" type="checkbox"/> YES <input type="checkbox"/> NO	
I T E M	12. DESCRIPTION LIST IN ORDER: NO. PCS., DWG/SPEC REQMT., PRESENT CONDITION			16. FIELD ENGR DECISION	17. <input type="checkbox"/> FIELD RECOMMENDED DISPOSITION <input type="checkbox"/> ENGINEER CONCURRENCE REQ'D. <input type="checkbox"/> ENGINEER DISPOSITION REQ'D.		
	<u>1 DRAIN VALVE</u> <u>1 P-SIBV-074 IS MISSING</u>						
	<u>CODE DATA PLATE.</u>						
13. REPORTED BY: <u>P. RASMUSSEN</u>			15. INSPECTION/VALIDATION/REVIEW DATE		15A. REPORTABILITY EVALUATION: NOT REPORTABLE: <input type="checkbox"/> OR DER NO. _____		
19. ACCEPTANCE OF REWORK/REPAIR <input type="checkbox"/> QC ENGR _____ DATE _____ <input type="checkbox"/> FIELD ENGR _____ DATE _____			18. DISPOSITION CONCURRENCE PROJ FIELD ENGR _____ DATE _____ GROUP SUPV _____ DATE _____ AUTHORIZED INSPECTOR _____ DATE _____		REVIEWERS: R/E. _____ QA _____ DATE _____		
14. ASSUMED CAUSE OF DISCREPANCY <u>UNKNOWN</u> INITIATOR <u>[Signature]</u> DATE <u>9/30/82</u>					NUCLEAR GROUP SUPV _____ (IF REQUIRED) DATE _____ PROJ ENGR _____ DATE _____ QA ENGR _____ DATE _____		

INDUSTRIAL VALVE AND INSTRUMENT DIVISION

MA 22127
R29290
Part (B)

FORM 107-1 MANUFACTURER'S DATA REPORT FOR NUCLEAR PUMPS OR VALVES
(AS REQUIRED BY THE PROVISIONS OF THE ASME CODE, SECTION III, DIV. 1)

RETENTION TIME 1.78

04-10-4 1-21-11

1. MANUFACTURED BY: DRISCOLL INDUSTRIAL VALVE & INSTRUMENT DIV. (NAME AND ADDRESS OF MANUFACTURER)
NICHOLAY 71 NORTH ALEXANDRIA, LOUISIANA
2. MANUFACTURED FOR: ARIZONA PUBLIC SERV. CO., P.O. Box 49, Palo Verde, Arizona, 85343. (NAME AND ADDRESS OF PURCHASER OR OTHER)
3. LOCATION OF INSTALLATION: Palo Verde Nuclear Gen. Sta., 34 1/2 So. of Wintersburg, Arizona

4. PUMP OR VALVE: 5500W-1-1001-1005 (TYPE AND ADDRESS)
3NC054 (SERIAL NO.)

(A) MODEL NO. OR TYPE	(B) MANUFACTURER'S SERIAL NO.	(C) CANADIAN REGISTRATION NO.	(D) DRAWING NO.	(E) SIZE	(F) INCH	(G) YEAR
(1) 5500W-1-1001-1005	H302AAC	3NC054	3NC054	3	1977	
(2) 5500W-1-1001-1005	H304AAC	3NC054	3NC054	3	1977	
(3) 5500W-1-1001-1005	H305AAC	3NC054	3NC054	3	1977	

CODE DATA
NO MANUFACTURER TAG

5. Designed for Steam, Water, or Air Service
(BRIEF DESCRIPTION OF SERVICE FOR WHICH EQUIPMENT WAS DESIGNED)

6. DESIGN CONDITIONS: (PRESSURE) (TEMPERATURE) VALVE PRESSURE CLASS (1)

7. GROSS WORKING PRESSURE: 1500 PSI AT 100°F

8. PRESSURE RETAINING PIECES

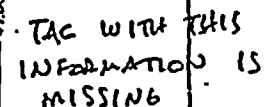
MARK	MATERIAL SPEC. NO.	MANUFACTURER	REMARKS
(A) CASTINGS			
(B) FORGINGS			
S3-25	SA182 Gr. F316	Trinity Forge, Inc.	Body
S3-63	SA182 Gr. F316	Trinity Forge, Inc.	Yoke

(1) FOR MANUALLY OPERATED VALVES ONLY

SUPPLEMENTAL SHEETS IN FORM OF LISTS, SKETCHES OR DRAWINGS MAY BE USED PROVIDED (1) SIZE IS 5-1/2" X 11", (2) INFORMATION IN ITEMS 1, 2 AND 5 ON THIS DATA REPORT IS INCLUDED ON EACH SHEET, AND (3) EACH SHEET IS NUMBERED AND NUMBER OF SHEETS IS RECORDED AT TOP OF THIS FORM.

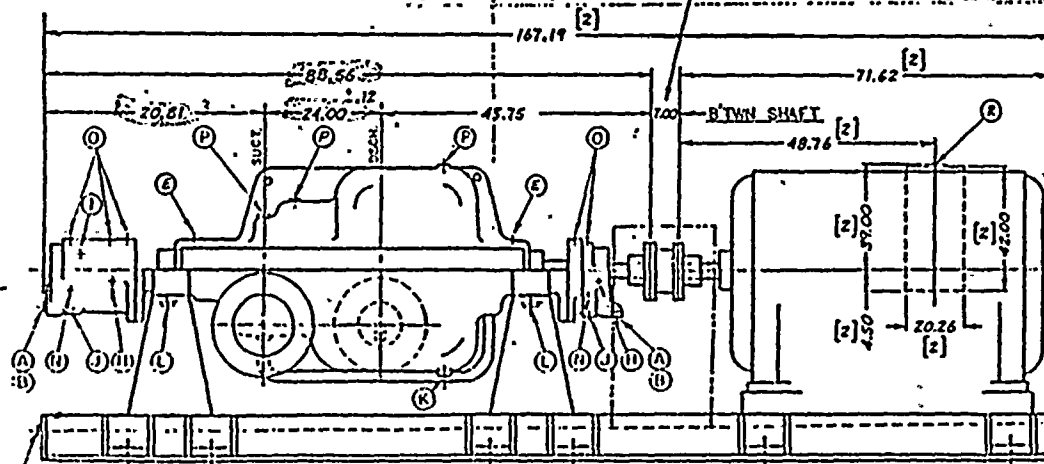
100

PCR_DWG
B-35210



[3] NOTE

ONE TO PROVIDE WITH EACH PUMP
A MINIMUM FLOW ORIFICE TO
BY-PASS 135 G.P.M. SEE ORIFICE
OUTLINE DWG. R-3557A.



[2]
-NOTE: THIS IS NOMINAL DIMENSION
FOR REFERENCE ONLY. SEE
INSTRUCTION MANUAL PRIOR
TO MOUNTING DRIVER.

UNIT DATA

PUMP SPECIFICATIONS

SITE: AITP. 4AAAAJ B TARD
INSTRUMENTS: 0 RPM 3560
POSITIONAL CCLV A C
INSTRUMENTS: 1500 RPM B
SURFING PLATING: 0 VMD ANISE E
TON: 32ND FR.
CAPACITY: 1010 GPM
PALING: J. CRANE 101M {85 #
INO. PUMPS: 3 SUR. 7/2 SQ.
ASSEMBLY: 11151G

COUPLING

INT. THOMAS SER. 52 SER. # 375
CLASH BY HHC

DRIVER SPECIFICATIONS

MORTIMER MESSINGHOUSE
TURNBULL ST. NYC
ISRAELI 6039-H
18-1250 3510 3560 nm
JAXOVOL 9 NUL 60 CIG
GALLI MAIL 450907Z
T-14
1977
THE INFORMATION CONTAINED HEREIN IS UNCLASSIFIED
DATE 08-01-2001 BY 60322 UCBAW/SJS/KSP

WIGGINS (LBS.)

PUMP. 5525
B431. 2365
COPPER. 7300
WAL. 15190

CUSTOMER DATA

PURCHASER:
ARIZONA NUCLEAR POWER PROJ
100 W. STATE ST. #1
PALE VERDE STATION-UNIT 1.86

[4] 10407-13-AM-021
SAS NO. 11/2M/3M-ATB-201
AUXILIARY FEEDWATER
4-64KV/8 MSD 85TU

PACKAGE NO. 1-M8, PAGE 5 OF 4
SYSTEM AUXILIARY FEEDWATER PUMP
TAG NUMBERS IM-AFB-P01
REPRODUCED FROM 16084X-5
DCN'S NONE
FCR'S NONE

Caution: Check Alignment Before Connecting. If Motor is from a Separate Location, You Should Be Allowed at Least Four Feet

Pink Paint etc 227465 Collected Yellow, etc. Pencil, compass, ruler, pencil, etc. etc. etc.	CERTIFIED TRUE EXHIBITION	Bingham-Willamette Company	FED 1A004/6
etc. etc. etc. etc. etc. etc. etc. etc. etc.		Bingham-Willamette Ltd.	R.V. S

16084X

PART

2926-PA2-084

TORREY PINES TECHNOLOGY
ARIZONA PUBLIC SERVICE—PVNGS

PACKAGE NO. 1-M8, PAGE 4 OF 7
SYSTEM AUXILIARY FEEDWATER PUMP
TAG NUMBERS MAFB-P01
REPRODUCED FROM 13-MM-021
DCN'S NONE APPLY
FCR'S NONE APPLY

TORREY PINES TECHNOLOGY
ARIZONA PUBLIC SERVICE—PVNGS

PART (C)
13-MM-021
ATTACHMENT 3
2426-PFL-089 A
Page 15

Material

AISI 440A

ASTM A-296 CA6NM

NA

ASTM A-193-B6/A-194-2H

Terry Spec EM-17

NA

ASTM A216-WCB

Terry Spec EM-15

ASTM A276

ASTM A216-WCB

Stainless Steel

Sheet Metal Lagging

Powerhouse Molded Insulation

1-1/2-2-1/2

g. Pump Diffusers

h. Casing Bolts/Studs

5B.3.3 Turbine

a. Turbine Rotor

b. Turbine Blades

c. Turbine Casing

d. Turbine Shaft

e. Steam Inlet Nozzle

f. Steam Exhaust Nozzle

g. Steam Strainer

h. Insulation Material:

Type

Thickness, in.

5B.4 PERFORMANCE DATA

The Supplier shall submit the following performance data:

5B.4.1 Pump Performance

ALSO USED CODE DATA SHEET
INFORMATION SEE PAGE 3A
875 + 135 = 1010

a. Pump Capacity, gal/min

b. Total Differential Head, ft
OR RATED TOTAL DEVELOPED HEAD

c. Pump Speed, r/min, rated

d. Guaranteed Pump Efficiency, Percent

e. Pump rated BHP (at 1.0 Sp. Gr.)

f. Shutoff Head, ft

Q-3175

R-3000

3560

78.5

Q-1032

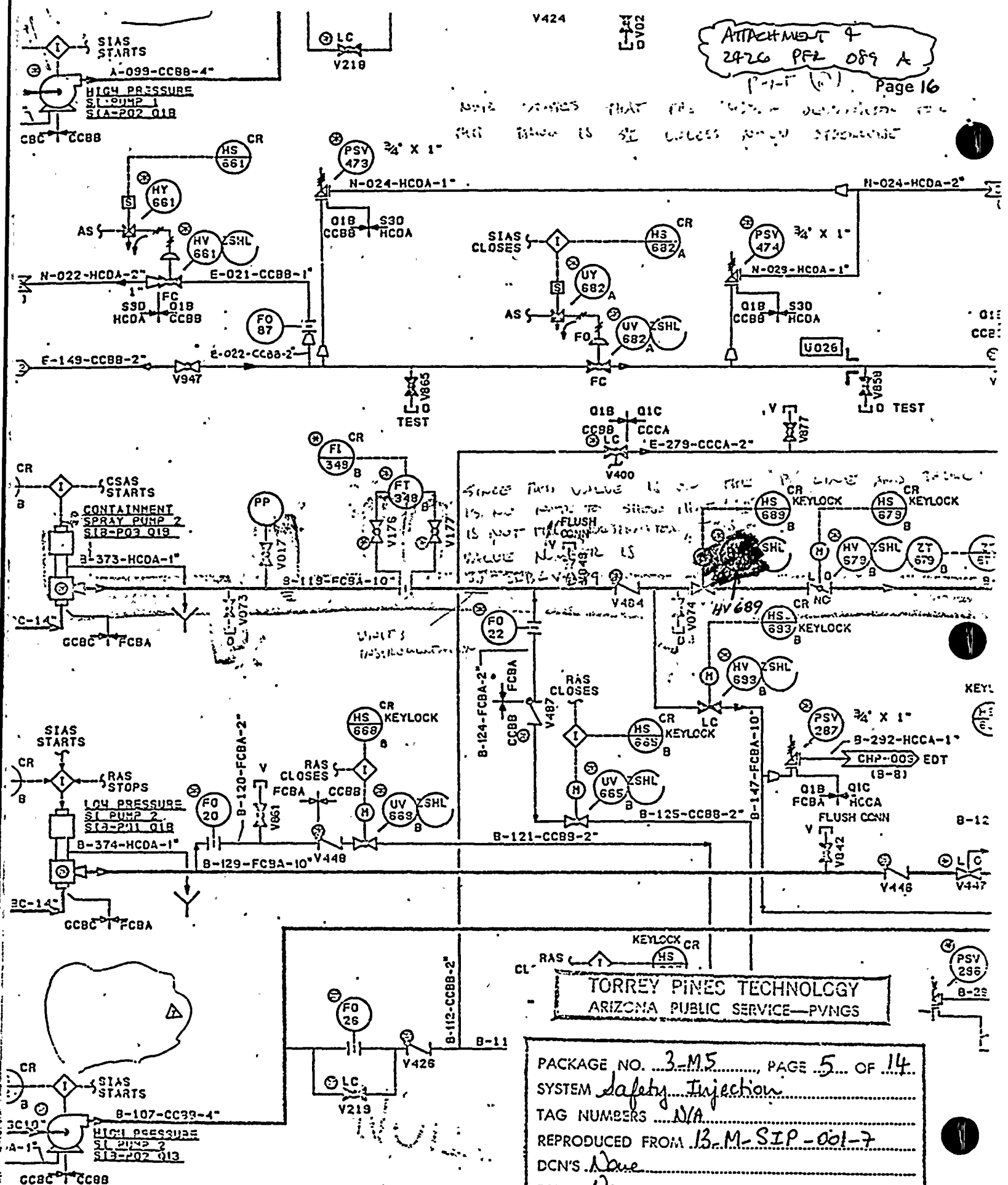
R-975

3750

THIS INFORMATION
WAS IN ADVERTISING
YELLOWED OUT, IT IS
ALSO ON THE TAG THAT
IS MISSING.
INFORMATION IS NOT
REQUIRED TO BE
ON A TAG 8/31/02 PFL

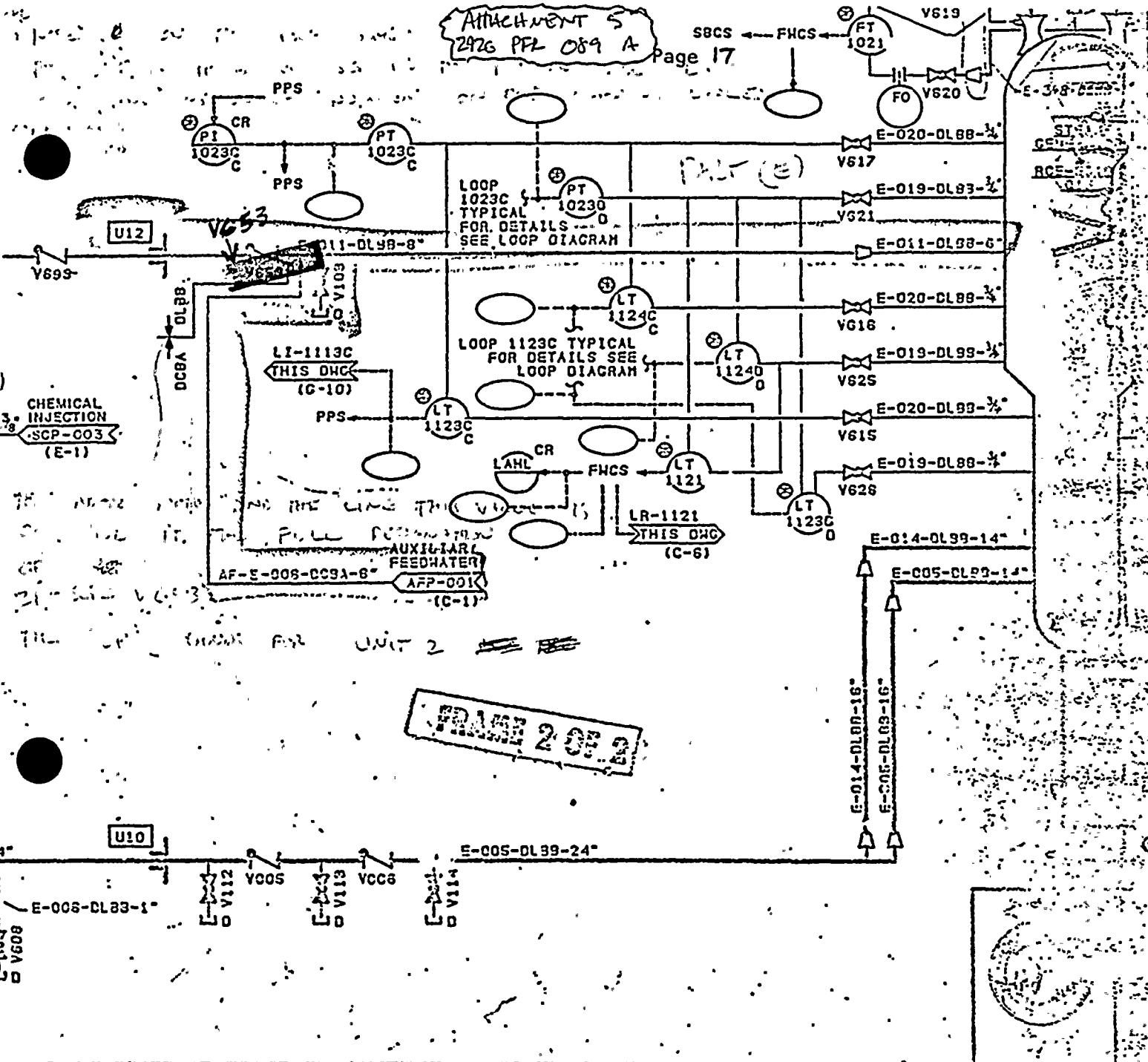
ATTACHMENT 4
2426 PFL 089 A
Page 16

NOTE: VALUES THAT ARE IN PARENTHESES ARE
FOR THIS IS AN UNLESS NOTED OTHERWISE



TORREY PINES TECHNOLOGY
ARIZONA PUBLIC SERVICE—PVNGS

PACKAGE NO. 3-M5, PAGE 5 OF 14
SYSTEM Safety Injection
TAG NUMBERS N/A
REPRODUCED FROM 13-M-SIP-001-7
DCN'S None
FCR'S None



FRAME 2 OF 2

PACKAGE NO. 2-173, PAGE 7 OF 14
SYSTEM AUXILIARY FEEDWATER
TAG NUMBERS 2PSCGV653, 2PSCGV103
REPRODUCED FROM 13-M-SCP-002, REV. 6
DCN'S NONE
FCR'S NONE

TORKEY PUMP TECHNOLOGY
ARIZONA PUBLIC SERVICE-PVNGS

STATUS: AA

VENDOR: *HBA*

PALO VERDE NUCLEAR GENERATING STATION				NONCONFORMANCE REPORT		VENDOR: <u>TRC</u>		NO. <u>PA-4685</u> PAGE <u>1</u> OF <u>1</u>							
1. UNIT <u>1</u>		2. MO DAY YR <u>9 30 82</u>		3. DRAWING/PART NO. <u>13 P-SIF 208</u>		REV. <u>13</u>		4. ITEM DESCRIPTION <u>DRAIN VALVE LINE 1-SI-119</u> <u>1 P-SIBV-074 1"</u>		5. ITEM LOCATION <u>CONT. SPRAY PUMP AUX. 56' EL.</u> <u>TRAIN B.</u>					
6. CLASS <u>Q1B</u>		7. STARTUP SYSTEM NO. <u>1-51-08</u>		8. SERIAL NO. <u>H-302 AAC</u>		9. SUBCONTRACTOR/SUPPLIER/BECHTEL <u>BECHTEL</u>		10. P.O. OR SPEC NO. <u>13 PM 204</u>		11. ASME AUTHORIZED INSPECTION REQ'D. <input checked="" type="checkbox"/> YES <input type="checkbox"/> NO					
12. DESCRIPTION LIST IN ORDER: NO. PCS., DWG/SPEC REQMT., PRESENT CONDITION				16. FIELD ENGR DECISION		17. <input type="checkbox"/> FIELD RECOMMENDED DISPOSITION <input type="checkbox"/> ENGINEER CONCURRENCE REQ'D. <input type="checkbox"/> ENGINEER DISPOSITION REQ'D.									
<u>1 DRAIN VALVE</u> <u>1 P-SIBV-074 IS MISSING</u> <u>CODE DATA PLATE.</u>															
13. REPORTED BY: <u>P. RASMUSSEN</u>				15. INSPECTION/VALIDATION/REVIEW DATE		15A. REPORTABILITY EVALUATION: NOT REPORTABLE: <input type="checkbox"/> OR DER NO. _____			REVIEWERS: R/E. _____ QA _____ DATE _____						
19. ACCEPTANCE OF REWORK/REPAIR <input type="checkbox"/> QC ENGR _____ DATE _____ <input type="checkbox"/> FIELD ENGR _____ DATE _____				AUTHOR. INSP _____ DATE _____		18. DISPOSITION CONCURRENCE PROJ FIELD ENGR _____ DATE _____ GROUP SUPV _____ DATE _____ AUTHORIZED INSPECTOR _____ DATE _____ NUCLEAR GROUP SUPV _____ (IF REQUIRED) DATE _____ PROJ ENGR _____ DATE _____ QA ENGR _____ DATE _____									
14. ASSUMED CAUSE OF DISCREPANCY <u>UNKNOWN</u>															
INITIATOR <u>El. 3</u> DATE <u>9/30/82</u>															

STATUS: AA

Ray Forrester

VENDOR: HBW-HBH

PALO VERDE NUCLEAR GENERATING STATION			NONCONFORMANCE REPORT			NO. <u>MC1438</u> PAGE <u>1</u> OF <u>1</u>	
1. UNIT	2. MO DAY YR	3. DRAWING/PART NO.	REV.	4. ITEM DESCRIPTION	5. ITEM LOCATION		
<u>1</u>	<u>9/30/82</u>	<u>1M-AFB-P01</u>	<u>N/A</u>	<u>Aux Feedwater Pump (motor driven)</u>	<u>MSSS-E6 81'</u>		
6. Q CLASS	7. STARTUP SYSTEM NO.	8. SERIAL NO.	9. SUBCONTRACTOR/SUPPLIER/BECHTEL		10. P.O. OR SPEC NO.	11. ASME AUTHORIZED INSPECTION REQ'D.	
<u>P</u>	<u>1AF-01</u>	<u>1A004</u>	<u>Bingham Wilamette/Bechtel</u>		<u>Rev. 15</u> <u>13mm021</u>	<input checked="" type="checkbox"/> YES <input type="checkbox"/> NO	
ITEM	12. DESCRIPTION LIST IN ORDER: NO. PCS., DWG/SPEC REQMT., PRESENT CONDITION		16. FIELD ENGR DECISION	17. <input type="checkbox"/> FIELD RECOMMENDED DISPOSITION <input type="checkbox"/> ENGINEER DISPOSITION REQ'D.			
	<u>1 The manufacture Pump</u>						
	<u>Specification data Plate is</u>						
	<u>missing from the Pump casing</u>						
13. REPORTED BY: <u>Ray Gutierrez</u>		15. INSPECTION/VALIDATION/REVIEW DATE		15A. REPORTABILITY EVALUATION: NOT REPORTABLE: <input type="checkbox"/> OR DER NO. _____		REVIEWERS: R/E _____ QA _____ DATE _____	
19. ACCEPTANCE OF REWORK/REPAIR <input type="checkbox"/> QC ENGR _____ <input type="checkbox"/> FIELD ENGR _____		AUTHOR. INSP _____ DATE _____		18. DISPOSITION CONCURRENCE PROJ FIELD ENGR _____ GROUP SUPV _____ AUTHORIZED INSPECTOR _____			
14. ASSUMED CAUSE OF DISCREPANCY <u>Unknown</u>				NUCLEAR GROUP SUPV _____ (IF REQUIRED) DATE _____ PROJ ENGR _____ QA ENGR _____			
INITIATOR <u>Ray Gutierrez</u>		DATE <u>9-30-82</u>					

IMPACT ASSESSMENT

PFR NO. 2426-PFR-089 REVISION B

AFFECTED ITEM: 1. Valve 1PSIBV074 (Unit 1)
2. Auxiliary Feedwater Pump (Motor-Driven) 1M-AFB-PO1

A. PREPARATION BY GA INITIATOR:

1. WHICH OF THE FIRST TWO POTENTIAL FINDING CLASSIFICATION CRITERIA APPLIES TO THIS PFR?
1 ☐, 2 ☐,
2. IN WHAT WAY MIGHT A SUBSTANTIAL SAFETY HAZARD BE CREATED AS A RESULT OF THE VIOLATION, DISCREPANCY OR ERROR (IF 1 OR 2 ABOVE WAS CHECKED)?:

3. OTHER COMMENTS:

See attached sheet

PREPARED BY: R. D. Phelps *R. D. Phelps* DATE: 10-13-82

B. PREPARATION BY GA TASK LEADER:

1. COMMENT ON ABOVE REPLIES:

Concur with Initiator's impact assessment.

2. DOES EVIDENCE EXIST OF MULTIPLE SIMILAR VIOLATIONS, DISCREPANCIES OR ERRORS? IF SO, LIST RELEVANT PFR NO'S: *PFR-077 (missing tags on instruments)*

3. IF POTENTIAL FINDING CLASSIFICATION CRITERIA 3, 4, OR 5 APPLIES, STATE WHICH ONE:
3 ☐, 4 ☐, 5 ☐

4. WHAT IS YOUR JUDGEMENT OF THE LIKELIHOOD OF MULTIPLE SIMILAR VIOLATIONS, DISCREPANCIES OR ERRORS ACTUALLY CREATING A SUBSTANTIAL SAFETY HAZARD - AND OF WHAT NATURE?

*Not likely - pumps are "self-identifying";
on valves - 53 valves were examined in
Unit 1, and only 1 had a missing tag.*

5. OTHER COMMENTS:

PREPARED BY: *F. J. [Signature]* DATE: 10/13/82

RDP
10-13-02

Attachment to Impact Assessment for 2426-PFR-089

Non-existence of identification tags on valves and equipment, in itself, does not result in a substantial safety hazard. However, it is generally regarded that plant operating personnel will verify the identify of valves and equipment prior to manipulation or initiation of maintenance or other such activity. If an untagged piece of equipment should be operated without prior verification, and the wrong (also untagged) equipment becomes involved, then this sort of a situation could lead to the development of inadvertent events which might ultimately constitute a substantial safety hazard.

R.D. Phelps
10-13-02



Arizona Public Service Company

P.O. BOX 21036 • PHOENIX, ARIZONA 85036

October 6, 1982

ANPP-21951-JAR

Mr. W. A. Simon
Project Manager
Torrey Pines Technology
10955 John J. Hopkins Drive
San Diego, California 92121

Subject: Potential Finding Reports Classified as "Findings"

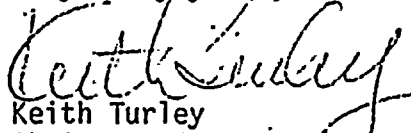
re: TPT:158:WAS:82, dated 9/23/82, Subject: as above

Dear Mr. Simon:

We have reviewed the Potential Findings classified as "Findings" transmitted by the referenced letter and have prepared specific corrective action plans for each item. As a vehicle for preparation of the corrective action plans and disposition of these findings, we have utilized the existing APS Corrective Action Report form and will utilize the existing appropriate QA procedures for tracking and closing the items.

Attached for your review are the corrective action plans for PFR's 001, 007, 014 and 027. If you have any questions regarding these plans, please contact Ed Van Brunt or John Roedel.

Very truly yours,


Keith Turley
Chairman of the Board
and Chief Executive Officer

KT:mft

Attachments

cc: O. M. De Michele w/attach.
T. G. Woods, w/attach.
E. E. Van Brunt, w/attach.
G. C. Andognini, w/attach.
J. A. Roedel, w/attach.



CORRECTIVE ACTION REPORT

Page 1 of 1

Classification of Adverse Condition: (See Back of Form) <input type="checkbox"/> NONCOMPLIANCE <input checked="" type="checkbox"/> Deviation		CAR No. <u>P-82-2-D</u>
How Discovered: <input type="checkbox"/> Audit No. _____ <input checked="" type="checkbox"/> Other _____		Reportability Evaluation: <input checked="" type="checkbox"/> Not Reportable <input type="checkbox"/> REF No. _____
Organization Responsible: Nuclear Engineering	Date Discovered: August 26, 1982	Date Reply Due: N/A
Initiator(s): TPT/GA	Controlling Document: N/A	Discussed With: N/A
Requirement: N/A		
Description of Adverse Condition: Refer to Attachment 1 , 2426-PFR-001		
Recommended Corrective Action: None - this is a Bechtel responsibility controlled by EDP 4.23. Exhibit B, SAR Change Notice, is signed by Nuclear Engineering Manager following review for Design Criteria Impact, among other reviews, Nuclear Projects Procedure NS-9.		
Corrective Action - Including Action to Prevent Recurrence: (See Back of Form)		
Prepared By: _____ Authorized By: _____ Date: _____		
Corrective Action Evaluation: Comments Acceptable _____ Not Acceptable _____ Verification Required YES _____ NO _____ Cause - see APS letter of October 25, 1982.		
Evaluator: _____ Date: _____		
Verification: Comments Acceptable _____ Not Acceptable _____ Evaluator: _____ Date: _____		

Record of Telephone Conversation

Party: Called ☒
Calling ☐

Date: 10/13/82

Time: Completed 9:50

Started 9:45

On-line .05

Name Jim Cook
Company Arizona Public Service
Location Phoenix AZ

Telephone No: A/C 402 No. 943 7200, X6014

Discussion: I called to ask that a copy of APS procedure NS-9 be sent to us. This is their procedure for making changes to licensing documents, and is needed to assist APS's Conservation Action Plan (# P-82-2-D) in response to PFR 2426-001. Jim Cook agreed to telecopy it to us since it is only a few pages. He said he would also send a copy by mail to assure that we got a good copy.

(Later note: I received the telecopied procedure NS-9, 10/13/82. Gave copy to H.S.C. C. Fisher and a copy to Doc. Center.

ENGINEERING DEPARTMENT PROCEDURE			
PROJECT ARIZONA NUCLEAR POWER PROJECT	SAR CHANGE CONTROL AND PREPARATION OF SAR AMENDMENTS	DATE 10/11/79	EDP- 4.23
		REVISION 2	PAGE 1 of 7
		SUPERSEDES EDP-4.23 FOR LAPD	
APPROVALS	PROJECT ENGINEER <i>[Signature]</i>	QA MANAGER <i>[Signature]</i>	MANAGER OF ENGINEERING <i>[Signature]</i>

1.0 PURPOSE

This procedure describes the methods to be used in preparing and approving amendments to the Palo Verde Nuclear Generating Station (PVNGS) Safety Analysis Report (SAR) resulting from changes in SAR commitments originated by Client requirements, Combustion Engineering Standard Safety Analysis Report (CESSAR) revisions, Nuclear Regulatory Commission (NRC) questions, or other project requirements.

2.0 PROCEDURE

A complete internal review of the various SAR change notices making up the proposed amendment shall be performed in accordance with the SAR amendment preparation flow chart (Exhibit A) and the following information:

2.1 Initiation of SAR Change Notice

When the need for a change to the SAR is identified, the responsible discipline engineer or designer prepares a SAR Change Notice, (Section 4.0 and Exhibit B).

A description of the proposed SAR change is entered (typed or hand-written) in Block 7 of the form.

The originator enters the required information in Blocks 1, 2, and 4 through 9 of the form. The originating discipline shall evaluate the SAR Change Notice to ensure that the change does not create any unresolved safety questions. The group supervisor (GS) then reviews the SAR Change Notice for completeness, enters his signature in Block 11 and forwards the SAR Change Notice to the Nuclear GS.

The initial review of the SAR Change Notice by the Nuclear GS is to determine the licensing impact of the change and to designate the SAR Change Notice Block 10 as "Hold for FSAR", or to designate the applicable reviewers for completion of the review.

2.2 Hold For FSAR

SAR Change Notices designated "Hold For FSAR" are assigned in Block 3 a sequential number from the FSAR Hold Control Log (Section 5.0). The Nuclear GS then submits the SAR Change Notice for Client approval prior to having the SAR Coordinator file and retain the document for future processing. The NGS sends a copy of the SAR change to the Field Construction Manager.

ENGINEERING DEPARTMENT PROCEDURE

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pg. 5

PROJECT ARIZONA NUCLEAR POWER PROJECT	SAR CHANGE CONTROL AND PREPARATION OF SAR AMENDMENTS	DATE 10/11/79 REVISION 2	EDR- 4.23 PAGE 2 OF 7
--	--	---	--

2.3 Route for Review

If the Nuclear GS determines that the SAR Change Notice should be incorporated in a pending amendment of the PSAR, then he designates the reviewers in Block 10. A sequential number from the SAR Change Notice Control Log (Exhibit D) is assigned and entered in Block 3.

After Block 10 has been initiated by the Nuclear GS, the Nuclear GS completes the distribution requirements and determines if the discipline Chief Engineer should approve.

- a. The identified reviewers are required to review the SAR Change Notice to determine what effect, if any, it will have in their own area of cognizance.
- b. If review reveals the need to change another section of the SAR, the cognizant discipline shall immediately initiate an additional SAR Change Notice describing the extent of the change. This change notice shall also be prepared and reviewed as described in this procedure.
- c. After review, Block 10 and Block 13 shall be initialed and dated by the reviewer and the SAR Change Notice and any comments forwarded to the NGS.
- d. Changes to SAR Chapter 17, Quality Assurance, shall additionally be approved by the Project Manager and by the Project Quality Assurance Engineer, who is responsible to obtain the Division QA Manager's approval.

2.3.1 Nuclear Group Review

Upon receipt by the Nuclear group, the SAR coordinator performs the following:

- a. Enters the appropriate information in the SAR Change Notice Control Log (Exhibit).
- b. Reviews the SAR Change Notice to ensure that the overall effect on the SAR has been considered and that all comments have been resolved. The SAR Change Notice together with any comments is forwarded to the Nuclear GS.

2
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2
P

ENGINEERING DEPARTMENT PROCEDURE		CAP P-82-2-D Pg. 6	
PROJECT ARIZONA NUCLEAR POWER PROJECT	SAR CHANGE CONTROL AND PREPARATION OF SAR AMENDMENTS	DATE 10/11/79	EDP 4.23
		REVISION 2	PAGE 3 OF 7

2.3.1 Nuclear Group Review (Continued)

The Nuclear GS reviews the notice, enters his approval signature, and forwards the SAR Change Notice to the Nuclear Chief Engineer (CE) if the Nuclear GS determines that Nuclear CE review and approval is required.

2.3.2 Chief Engineer's Review

After both CE reviews have been accomplished in accordance with Sections 2.3c and 2.3.1, the Nuclear GS transmits the notice to the Project Engineer (PE) as required.

2.3.3 Project Engineer Review

The PE reviews the SAR Change Notice and, after approval, enters his signature. Upon receipt of SAR changes for approval, the PE determines which of the following two submittals for review are required:

- a. Submittal to Client and, as required, Combustion Engineering, NUS, and Consultants for their review, approval, and subsequent submittal to the NRC. (See sections 3.3.8 through 3.3.11 for NRC submittal procedures.)
- b. Submittal to the four-party review committee. In this case the PE indicates the parties involved.

2.3.4 Field Notification

After the PE signs the SAR change, the nuclear GS sends a copy to the Field Construction Manager.

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3.0 FOUR-PARTY REVIEW COMMITTEE

The four-party review committee consists of ANPP, Bechtel and, as appropriate, Combustion Engineering, NUS, and Consultants.

3.1 Schedule and Notification of Meetings

The PE shall schedule the date, time, and location of the SAR amendment review and shall notify the parties involved.

3.2 Participants

The PE shall determine which parties shall participate.

3.3 Four-Party Review Committee Meeting Procedure

- 3.3.1 Based upon the internal review the SAR Coordinator prepares the four-party review material and prints the required number of copies on pink paper.

ENGINEERING DEPARTMENT PROCEDURE			
PROJECT ARIZONA NUCLEAR POWER PROJECT	SAR CHANGE CONTROL AND PREPARATION OF SAR AMENDMENTS		DATE 10/11/79
			EDP- 4.23
			REVISION 2
			PAGE 4 OF 7
		SUPERSEDES ANPP Rev. 1	
APPROVALS	PROJECT ENGINEER <i>W. G. Bingham</i>	QA MANAGER <i>R. E. Bashore</i>	MANAGER OF ENGINEERING <i>W. D. Horner</i>

3.3.2 The four-party review committee examines the proposed changes and designates each amended section by checking the appropriate number on a Four-Party Review Control Sheet (Exhibit C).

2
ANPP | 3.3.3 If a section is designated 1, 2 or 3, it is edited for final review by the Nuclear GS.

2
ANPP | 3.3.4 If a section is designated 4 or 5, it is returned to the originator to resolve comments and/or rewrite and is then returned to the Nuclear GS for review.

3.3.5 After Nuclear GS review, rough draft copies of any section designated 4 or 5 are edited for further review.

3.3.6 Copies of any section previously designated 4 or 5 (disapproved) are returned to the four-party review committee for reexamination and approval.

3.3.7 The approved final copy is edited and returned to the Nuclear GS for final quality control review. Sections previously designated 1, 2, or 3 will also undergo such review.

3.3.8 After final review, the Nuclear GS releases the various sections of the amendment for printing and submittal to the NRC.

3.3.9 The SAR Change Notices utilized in section 2.1 shall be completed to indicate that either the Four-Part Review Control Sheets or the Client/NSSS SAR change approval references determine the final content of the amendment submitted to the NRC.

3.3.10 Copies of the approved Four-Party Review Control Sheets, associated annotated text, and/or completed copies of the SAR Change Notices will be maintained in the project files.

1
ANPP | 3.3.11 (Deleted)

ENGINEERING DEPARTMENT PROCEDURE			
PROJECT ARIZONA NUCLEAR POWER PROJECT		SAR CHANGE CONTROL AND PREPARATION OF SAR AMENDMENTS	
DATE 10/11/79		EDP 4.23	
REVISION 2		PAGE 5 OF 7	

4.0 SAR CHANGE NOTICE

Instructions for Completing the SAR Change Notice are listed below using Block Numbers indicated on the form. Information in addition to that described below may be entered if desired.

Block No.	Instructions
1	Check the box appropriate for the document being changed.
2	Discipline - Indicate originating discipline.
3	Number - The Nuclear Group Supervisor or his representative shall assign the number of the SAR Change Notice.
4	Originator - The originator is the individual completing the form.
5	Date - Enter the date that the SAR Change Notice was initiated.
6	Reference Sections of SAR - List those sections of the SAR which are directly affected by the SAR Change Notice.
7	Description of Change - Briefly state the extent of the Change and the effects on the referenced sections of the SAR listed in Block 6. If more space is required, use additional sheets and list them as attachments in Block 7.
8	Referenced Specifications or Drawings - List design documents that are directly affected by the proposed change to the SAR. These should include only the documents modified by the SAR Change Notice.
9	Justification - The reason for initiating the Change should be briefly stated. Specific communication requesting the Change should be included.
10	Distribution - The SAR Change Notice is distributed for review as noted in Block 10. After review, the Notice is initialed and dated, and returned to the Nuclear GS.
11	Submitted By - Upon satisfactory review, the Group Supervisor of the same discipline as that shown in Block 2, enters his signature and date.

2
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ENGINEERING DEPARTMENT PROCEDURE			
PROJECT		DATE	EDP
ARIZONA NUCLEAR POWER PROJECT		10/11/74	1
SAR CHANGE CONTROL AND PREPARATION OF SAR AMENDMENTS		REVISION 2	PAGE 6 OF 7

4.0 SAR CHANGE NOTICE (Continued)

Block No.	Instructions
12 thru 15	Other Signatures - Upon completion of review, the designated individuals shall enter their signature and the date in the appropriate block.
16 thru 18	Concurrence - Written correspondence from the Client (and NSSS Supplier, as appropriate) shall be referenced as concurrence.
19	Closeout Action - Describe briefly the closeout action that was taken and enter the initials of the Nuclear Group Supervisor or designee and date, e.g. "Added as Amendment 5 to PSAR Section 10.2."

2
ANPP

5.0 SAR CHANGE NOTICE CONTROL LOG

The SAR Coordinator is responsible for entering the information required below in the SAR Change Notice Control Log (Exhibit D).

1
ANPP

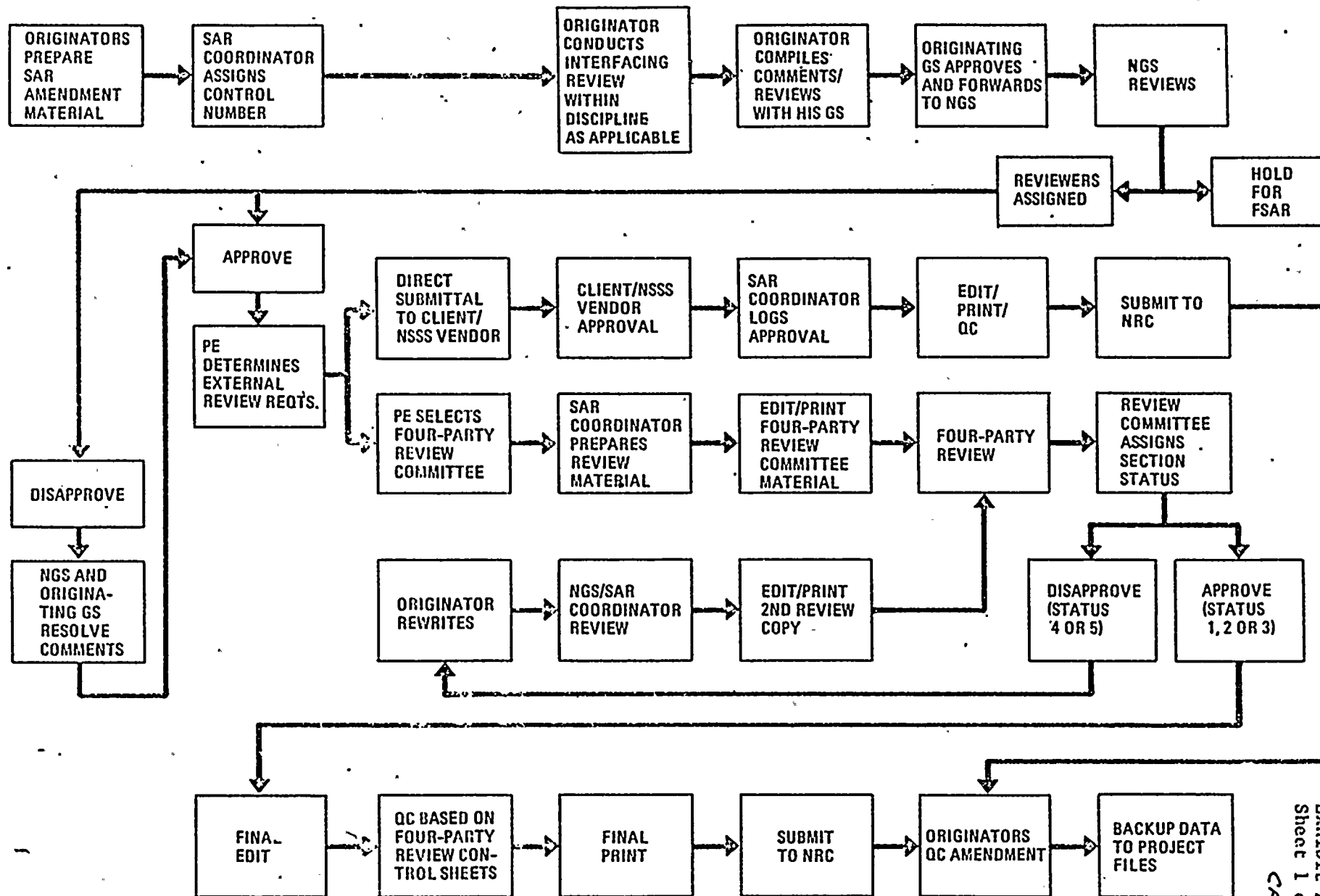
Column No.	Instructions
1	SAR Change Notice Number - The Nuclear Group Supervisor or his representative shall assign the next sequential number assigned to the SAR Change Notice.
2	Originator - The originator is the individual completing the form.
3	Referenced Section of SAR - List those sections of the SAR which are directly changed as noted in Block 6 of the SAR Change Notice.
4	Date of Assignment - Enter the date that the SAR Change Notice was initiated.
5	Date sent to Client (and NSSS Supplier, as appropriate) - Enter date that the SAR Change Notice was transmitted to Client.
6	Date of Concurrence - Client (and NSSS Supplier, as appropriate) enter date(s) indicated in Blocks 16 and 17 of the SAR Change Notice.
7	Closeout - Enter the amendment number and the date that close-out action was accomplished.

ENGINEERING DEPARTMENT PROCEDURE			
PROJECT ARIZONA NUCLEAR POWER PROJECT	SAR CHANGE CONTROL AND PREPARATION OF SAR AMENDMENTS	DATE 10/9/78	EDP- 4.23
		REVISION 1	PAGE 7 OF 7

6.0 ATTACHMENTS

Exhibit A--SAR Amendment Preparation Flow Chart
Exhibit B--SAR Change Notice, form PF-939(10407)
Exhibit C--Four-Party Review Control Sheet
Exhibit D--SAR Change Notice Control Log

1
ANPP



SAR AMENDMENT PREPARATION FLOW CHART



PALO VERDE NUCLEAR GENERATING STATION UNITS 1, 2 & 3
SAR CHANGE NOTICE
JOB NO. 10407

EDP-4.23

Exhibit B

Sheet 1 of 1

0
ANPP

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1. ☐ PSAR CHANGE NOTICE 2. DISCIPLINE _____ 3. NO. _____
☐ FSAR CHANGE NOTICE
☐ OTHER

4. ORIGINATOR _____ 5. DATE _____

6. REFERENCED SECTIONS OF SAR

7. DESCRIPTION OF CHANGE

7A. ATTACHMENTS

- ☐ - SAR PAGES TO BE AMENDED
☐ DESIGN CRITERIA REVISION REQUEST
(IF REQUIRED)

7B. CHANGE IN SCOPE ☐ YES ☐ NO
7C. TREND NOTICE REQUIRED ☐ YES ☐ NO
TREND NOTICE NO. _____

8. REFERENCED SPECIFICATIONS OR DRAWINGS

9. JUSTIFICATION ☐ BELOW ☐ ATTACHED

10. DISTRIBUTION (INITIAL-DATE)

☐ HOLD FOR FSAR ☐ ROUTE FOR REVIEW

ARCH. _____ CONT. SYST. _____

C/S _____ APE NO. 1 _____

ELECT. _____ APE NO. 2 _____

MECH. _____ PQAE (CHAP. 17 ONLY) _____

PLANT DES. _____ PM (CHAP. 17 ONLY) _____

19. CLOSEOUT ACTION

1. INCORPORATED IN AMEND. _____
☐ YES
☐ VOIDED
☐ AS MODIFIED BY 4 PARTY REVIEW
CONTROL SHEET

2. DESIGN CRITERIA REVISION
☐ IN PROGRESS
☐ VOIDED
☐ NOT REQUIRED

11.	12.	13.	14.
SUBMITTED BY (GROUP SUPV.)	DATE	REVIEWED BY (NUC. GROUP SUPV.)	DATE
APPROVED BY (PROJ. ENG.)	DATE	CONCURRENCE (CLIENT)	DATE
APPROVED BY (NUC. CHIEF ENG.)	DATE	CONCURRENCE (NSSS SUPPLIER)	DATE

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PALO VERDE NUCLEAR GENERATING STATION
PRELIMINARY SAFETY ANALYSIS REPORT
FOUR-PARTY REVIEW CONTROL SHEET

PROJECT _____

DATE _____

JOB NO. _____

UNIT NO. _____

SECTION & TITLE _____

THIS SECTION IS:

- ☐ 1. APPROVED AS IS.
- ☐ 2. APPROVED WITH CHANGES NOTED.
- ☐ 3. APPROVED WHEN COMMENTS NOTED HAVE BEEN RESOLVED.
- ☐ 4. TO BE REWRITTEN AND REVIEWED BY FOUR-PARTY REVIEW COMMITTEE.
- ☐ 5. OTHER _____

SIGNATURES

APS _____ DATE _____

BECHTEL _____ DATE _____

C-E _____ DATE _____

OTHERS AS APPLICABLE _____ DATE _____

NUS _____ DATE _____

FUGRO _____ DATE _____

CC: APS

C-E

OTHERS _____

NUCLEAR PROJECTS
DEPARTMENT PROCEDURE

NO.: NS-1, Rev. 5
SUBJECT: General Procedures
TITLE: Correspondence Handling

FOR USE BY:

EFFECTIVE: January 30, 1982

Nuclear Projects Department

APPROVED: *Adita R. [Signature]* J. Allen

I. SUMMARY

This procedure explains the methods used for handling and controlling all incoming and outgoing correspondence in the Nuclear Projects Department. Emphasis is placed on expedient communication to responsible personnel, document retrievability and the maintenance, storage and protection of permanent files.

II. SCOPE

This procedure is used by all Nuclear Projects personnel and includes all incoming and outgoing correspondence.

-III. CONDUCT OF ACTIVITY

A. Activity No. 1 - Receipt of Mail

Upon receipt, all mail is divided by the Nuclear Projects Drawing and Document Control (DDC) Center into two groups: that mail which is directed to individuals within Nuclear Projects Department, and that mail directed to the Vice President, Nuclear Projects.

All mail marked for individuals within the department is to remain unopened and be delivered twice a day, once in the a.m., once in the p.m., to those people. If a letter is directed to an individual and it is determined that this document should be incorporated into the NP Filing System, the addressee should return it for further processing per Activities Nos. 2 and 3. All other mail

TITLE: Correspondence Handling

NO.: NS-1, Rev. 5

PAGE 2

directed to the Vice President, Nuclear Projects, is to be opened and processed per Activities Nos. 2 and 3.

B. Activity No. 2 - Incoming Correspondence/Consultants

1. CE, GE, NUS Corp., ERTEC, and other consultants submit several copies of the cover letter and enclosures of all correspondence directed to APS. All front sheets of this correspondence are to be date stamped upon receipt.
2. Upon completion of date stamping, one copy is pulled and used to log all letters in the appropriate log book, providing information as indicated in Attachment A.
3. File numbers and supervisors are assigned and/or marked on each document.
4. The original, with enclosure, is filed in the subject file, per NS-7.
5. All remaining copies are stamped (See Attachment B) and processed as follows:
 - a. One copy with enclosure - Supervisor Stamp, as applicable.
 - b. One copy with enclosure to Designated Representative (DR) with appropriate stamp.

5

TITLE: Correspondence Handling

NO.: NS-1, Rev. 5

PAGE 3

6. DDC group receives Bechtel mail, date stamps, assigns designated representative, in accordance with appropriate Manager/Supervisor directions, marks distribution, and gives DR his copy with enclosure.

7. Further distribution is made by the DDC group as indicated by supervisor's distribution stamp.

8. Upon completion of further distribution, the supervisor copy is filed in the Day File per NS-7.

5

C. Activity No. 3 - Incoming Mail, General Correspondence

All correspondence received from parties other than CE, GE, NUS, ERTEC, and Bechtel is handled as follows:

1. All front sheets of the correspondence are date stamped.

2. A file number and supervisor are assigned and marked.

3. Three copies of the cover letter and one copy (two, if supervisor distribution needed) of the enclosure is made.

4. One copy is retained and logged into the appropriate log book, (providing information as shown in Attachment A).

5. The original copy w/enclosure is pulled and filed per NS-7.

5

TITLE: Correspondence Handling

NO.: NS-1, Rev. 5

PAGE: 4

6. Xerox copies are stamped and processed as follows:

- a. One copy with enclosure - supervisor stamp, as applicable.
- b. One copy with enclosure to DR, with appropriate stamp.

D. Activity No. 4 - Documents for "Important Paper File"

At the discretion of the Vice President, Nuclear Projects, or his designated alternate, certain one-of-a-kind documents such as signed original purchase orders of Permanent Plant Equipment, which are considered important are transmitted by cover letter to the "Important Papers File" located in a protected area at the APS Main Office, 411 North Central Avenue, Phoenix, Arizona. These transmittals are typed by the secretary(ies).

E. ACTIVITY No. 5 - Outgoing Correspondence

1. The writer will assign a subject file number, if known. If a new file number is needed, or there is any question as to proper file number, it will be assigned by ODC personnel. The secretary(ies) type, draft type, if requested, (or transcribe from tape) and return outgoing correspondence to writer for review. The writer reviews correspondence with appropriate personnel, identifies distribution, and gets Manager/Supervisor approval, if appropriate. Follow-up date should also be noted, if applicable.
2. A draft letter is reviewed and modified if needed and is returned to secretary(ies) for final typing and distribution.

TITLE: Correspondence Handling

NO.: NS-1, Rev. 5

PAGE 5

3. Upon receipt of a revised draft, the secretary will assign the next letter, memo, or TWX number in sequence and in the appropriate Log Book for outgoing correspondence (Attachment C), listing the following:

- a. Letter, Memo, or TWX number
- b. Date typed
- c. To
- d. From
- e. Subject (brief description of contents)
- f. Reference
- g. Distribution (list of persons receiving copies)
- h. File number (for Bechtel correspondence use Bechtel system)

5

4. Return letter to writer for proofreading. After proofreading, originator gets Manager/Supervisor approval and/or signature, if appropriate, or gives to Vice President, Nuclear Projects, or his designated alternate for signature.

5

5. The letter is returned to secretary(ies) for copying, distribution, and mailing. If letter is telecopied, this will be indicated at top of letter as follows: TELECOPIED - DATE (if different from date of letter) and noted in Log Book. If a letter is cancelled, the log will be marked accordingly. The secretary(ies) will:

- a. Make Xerox copy for day file, subject file, persons to receive copies and follow-up file, if appropriate.

TITLE: Correspondence Handling

NO.: NS-1, Rev. 5

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- b. Insert letter into addressed envelope and place at outgoing mail pickup station.
- c. Distribute copies to individuals as necessary.
- d. File day file copy (without enclosures) chronologically and arrange letters having same date according to letter number.
- e. Place subject file copy (including enclosures) in sorting bin.

ATTACHMENT A

CAD P-82-2-D
pg. 20

		Copy	
ANPP Distribution. A. Rogers -	ACR		
	MFH		
	BSE		
	MDH		
	WLH		
	DSF		
	FWH		
	JMA		
	GCA		
	JAR/RLR		✓ enc.
	EEVB, Jr.		✓ enc.
FILE:			
enc.			

		Copy	CAP. P-82-2-D pg. 21
ANPP Distribution J. Allen -	JNA		
	JTB		
	MLR		
	EJG		
	ECS		
	WFQ		
	NLH		
	JRM		
	SJG		
	DBF		
	FWH		
	ACR		
GCA			
	JAR/RLR	enc.	
	EEVB, Jr.	enc.	
FILE: .			
enc.			

Responsible Eng.	Action By
	(Date)

<input type="checkbox"/> Review & Comment	<input type="checkbox"/> Info
<input type="checkbox"/> Follow	<input type="checkbox"/> Process

ANPP Distribution S. Johnson	JMA	Copy
	SG	
	FWH	
	SCJ	
	ACR	
	EAR	
	GCA	
	DBF	
	JAR/RLR	Venc.
	EEVB, Jr.	Venc.
ROUTE		
FILE		
enc.		

*To Assign		
ANPP Management Distribution	Resp.	JMA
	Mgr./	ACC
	Supv	GCA
		FTH
		SCJ
		BSX
		DBF
		*CLR
		*JAR
		ACR
	*EEVB, Jr.	venc.
	ROUTE	
	F-U	
FILE		
enc.		

AMPP
SHORT ROUTE

Van Brunt, E.
Kobbs, R.
Reedel, J.
Allen, J.
Johnson, S.
Kaplan, B.
Rogers, A.

ATTACHMENT C

APs.

OUTGOING CORRESPONDENCE
NUCLEAR PROJECTS — RECORDS MANAGEMENT

Procedure No. RM-50, NS-1

[illegible]

CAP P: 82-1-D Pg. 22

TO: 10/13/82

TO: *Jim Chasney / J. Brummett*

FROM: *Jim Cook* *Sage*

APS

G.A. 2090
15/d



NUCLEAR PROJECTS

NO.: NS-9, Rev. 6

DEPARTMENT PROCEDURE

SUBJECT: Licensing Document
Change

TITLE: PSAR-17, FSAR, FES
Change Procedure

FOR USE BY:

EFFECTIVE: June 1, 1982

Nuclear Projects Department

APPROVED: *A. Gailer Rogers*

I. SUMMARY

This procedure describes the internal APS Nuclear Engineering Department control of changes in equipment, specifications, design, or information from that reported and analyzed or reported in Preliminary Safety Analysis Report Chapter 17 (PSAR-17), Final Safety Analysis Report (FSAR), or Final Environmental Statement (FES) NUREC-0841.

II. SCOPE

This procedure applies to any changes in specifications, equipment, or design which is reportable to the NRC, or should be incorporated in the PSAR-17, FSAR, or FES after issuance of a Construction Permit, but prior to receipt of an Operating License.

III. CONDUCT OF ACTIVITY

A. Receipt

The Bechtel SAR Change Notice PF-939 (PSAR-17 and FSAR), or Design Change Checklist Environmental Impact Form (FES) is received and distributed in accordance with Procedure NS-1, Correspondence Handling.

COPY

AC-5555-0324

TITLE: PSAR-17; FSAR, FES Change Procedure

NO.: NS-9; Rev. 6

PAGE 2

B. Logging

The Responsible Engineer (RE) or his Designated Representative (DR) is responsible for logging in a Review Log (F-AP-2) and attaching a Document Review Control form (F-AP-8).

C. Distribution

The RE determines what disciplines, if any, are required to review the change. F-AP-8 is used to route the change and document comments and resolutions. Additionally, activity may be informally initiated from within Nuclear Projects.

D. Review

Each reviewer shall review documents for compliance with applicable plant design criteria licensing documents, System Descriptions Regulatory Guides, codes and/or standards, and writes any comments on Form F-AP-8, or indicates what pages of the text have the reviewer's comments written on them. In addition, the reviewer shall identify, in a manner suitable for the document being reviewed, any comments which should be personally resolved (priority comments).

The RE reviews the routed F-AP-8 to determine if the change:

1. Involves construction activity not evaluated by the NRC which may result in a significant adverse environmental impact that was not evaluated in the Final Environmental Statement, or

TITLE: PSAR-17, FSAR, FES Change Procedure

NO.: NS-9, Rev. 6

PAGE 3

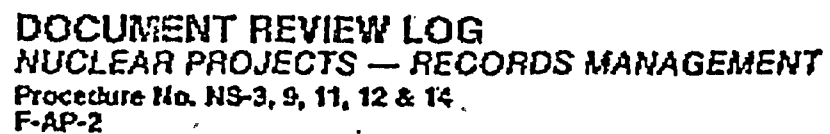
-
2. Involves significant changes in PSAR-17 information from that provided to the NRC through PSAR Amendment 20.

E. Resolution

If the review reveals that the proposed SAR Change does not identify any of the conditions in "D", then the F-AP-8 shall be marked "Implement Change" on F-AP-8 by the RE and routed to the Nuclear Engineering Manager. However, if it is determined that the proposed change should not be made or more information is needed, the appropriate block should be checked and the initiator of the proposed change should be notified.

The F-AP-8 shall be marked "Notify NRC of Proposed Change" and routed for signature. After the F-AP-8 is complete, the NRC shall be notified by letter of the change.

If the activity is the result of a Bechtel SAR Change Notice PF-939, the Notice shall then be signed and returned to Bechtel.



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Pg. 26



PSAR-17, PSAR, FES CHANGE FORM
NUCLEAR PROJECTS — RECORDS MANAGEMENT
Procedure No. NS-3
F-AP-8

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pg. 27

TECHNICAL CHANGE NO.	DATE
NUCLEAR PROJECTS MEMO NO.	DATE
DESIGN CHANGE CHECKLIST ENVIRONMENTAL IMPACT FORM NO.	DATE

☐ PSAR-17 Change

☐ FSAR Change

☐ FES Change

REVIEWER	ROUTE	SIGNATURE	DATE
Nuclear Engineer			
Supervising Engineer - Mechanical			
Nuclear Engineer			
Supervising Engineer - Civil			
Nuclear Engineering Manager			
Supervising Engineer - I & C			
Supervising Engineer - Electrical			
Health Physics/Environmental			
Other			

RECOMMENDED ACTION

☐ Implement Change

This change does not involve a construction activity not evaluated by the NRC which could result in a significant adverse environmental impact that was not evaluated in the Final Environmental Statement. Also, this change does not involve any significant changes in the PSAR Chapter 17 from that provided to the NRC through PSAR Amendment 20.

☐ Change not to be implemented.

☐ More information needed.

☐ Notify Nuclear Regulatory Commission (NRC) of Proposed Change

	DATE NUCLEAR ENGINEERING MANAGER (LICENSING) OR VICE PRESIDENT NUCLEAR PROJECTS MANAGEMENT NOTIFIED
	DATE NRC NOTIFIED
	TELECON/LETTER NO.

SUPERVISING ENGINEER - LICENSING	DATE
NUCLEAR ENGINEERING MANAGER (LICENSING)	DATE
VICE PRESIDENT NUCLEAR PROJECTS MANAGEMENT	DATE

ARIZONA PUBLIC SERVICE COMPANY
NUCLEAR SERVICES DEPARTMENT
PROJECT PROCEDURES MANUAL

AC-4444-0118

ARIZONA PUBLIC SERVICE COMPANY
NUCLEAR PROJECTS DEPARTMENT
PROJECT PROCEDURES MANUALTable of ContentsRevision No. 52Date: August 9, 1982

<u>Number</u>		<u>Rev.</u>	<u>Date</u>
NS-1	Correspondence Handling	5	01/30/82
NS-2	Control of SAR & ER, Amendments & Supplements	7	06/01/82
NS-3	Technical Document Control	7	01/09/81
NS-4	Procurement Document Control	5	02/08/80
NS-5	Indoctrination of New Employees	2	11/28/80
NS-6	Nuclear Projects Procedures & Forms Control	5	06/24/82
NS-7	Nuclear Engineering & QA Dept. Filing System	6	02/08/82
NS-8	Nuclear Plant Operating Experience	DELETED	03/14/78
NS-9	PSAR-17, FSAR, FES Change Procedure	6	06/01/82
NS-10	Meteorological System Scope and Activities Procedure	5	02/08/82
NS-11	Environmental Evaluation Procedure	3	12/07/79
NS-12	Procedure for Administration of Environmental Control Program	3	12/07/79
NS-13	Scope & Activities Procedure for Strong Motion Accelerographs	4	02/08/82
NS-14	Control of NRC Inspection and Enforcement Circulars, Bulletins & Information Notices	2	01/21/80
NS-15	Class IE Equipment Qualification Procedure IEEE-323 (1974), IEEE-344 (1975)	3	04/22/82
NS-16	PVNGS Security Documents	4	06/17/82
NS-17	Processing Bechtel's Deficiency Evaluation Reports	0	04/14/80
NS-18	Review of INPO Significant Operatin Experience Report	2	06/14/82
NS-20	Calculations	0	05/17/82
NS-21	Computer Programs	0	05/06/82
NS-22	Specifications	0	06/14/82
NS-25	Technical (Internal) Document Control	0	05/25/82
NS-26	Engineering Studies	0	05/26/82






ARIZONA PUBLIC SERVICE COMPANY
NUCLEAR PROJECTS DEPARTMENT
PROJECT PROCEDURES MANUAL

CAP P-822-D
pg. 30

F-AP Table of Contents

Revision No. 52

Date: August 9, 1982

<u>F-AP Number</u>	<u>Title</u>		<u>Rev.</u>	<u>Date</u>	<u>Procedure</u>
F-AP-1	Document Review Control Form	PV214-06F	3	09/81	NS-2,3,6, and 12
F-AP-2	Document Review Log Form	PV214-06J	3	09/81	NS-3, 9, 11,12,14
F-AP-3	Document Change Request Form	PV214-06Y	1	09/81	NS-6
F-AP-4	"Nuclear Power Experience: Monthly Report		DELETED	03/14/78	
F-AP-5 F-AP-6	Acceptance Form (Confidential)	PV214-06G	4	04/82	NS-4 |
F-AP-7	Indoctrination Checklist	PV214-06N	4	09/81	NS-5
F-AP-8	PSAR-17, FSAR, FES Change Form	PV214-06P	4	09/81	NS-9
F-AP-9	Construction Activity Environ- mental Evaluation	PV214-06K	2	09/81	NS-11
F-AP-10	NRC Inspection & Enforcement Circular Review Form	PV214-06Q	2	09/81	NS-14
F-AP-11	Deficiency Evaluation Report Acceptance Form	PV214-08C	1	04/82	NS-17 |
F-AP-12	INPO/NSAC Significant Operating Experience Report Review Form	PV214-06E	0	09/81	NS-18
F-AP-13	Computer Program Version Log Sheet	PV214-09B	0	04/82	NS-21
F-AP-14	Document Title Sheet	PV214-09C	0	04/82	NS-25
F-AP-15	IEEE-323-1974, 344-1975 Equipment Qualification Program Checklist	PV214-09D	1	06/82	NS-15 |
F-AP-18	Specification Change Notice (SCN)	PV214-08M	0	08/82	NS-22 |
F-AP-19	SCN Register	PV214-08N	0	08/82	NS-22 |
Other Forms:					
	Incoming Correspondence	PV214-00B	1	09/81	NS-1
	Outgoing Correspondence	PV214-00A	1	09/81	NS-1

TELECON

10/21/82

w/John Roedel, QA Manager, APS

From: C. R. Fisher

I called Roedel to discuss PFR-001. He said that there was a misunderstanding on our part about how licensing commitments were handled by APS.

He said all commitments were placed in the SAR or ER. Bechtel gets a copy of all letters to NRC. Quinn, of APS, then tells Bechtel if an SAR change is required. If so, Bechtel implements the change. The change process includes a review for impact on the design criteria.

He promised to send GA a letter identifying the procedure which assures that Bechtel is informed by APS of needed SAR changes.

TELECON to Bill Quinn, APS

10/28/82

Description in PFR in error because commitment tracking takes commitments from licensing documents only. Letter to NRC (cc Bechtel w/comments). If design change, regulations review w/BPC. Talk to NRC separately before design change concept, design change committee.

Arizona Public Service Company

P.O. BOX 21566 • PHOENIX, ARIZONA 85036

CAP P-82-2-D
Pg. 32

October 25, 1982
ANPP-22099-JAR

Mr. W. A. Simon
Project Manager
Torrey Pines Technology
10955 John J. Hopkins Drive
San Diego, California 92121

Subject: Potential Findings Reports Classified As "Findings"
File: 82-003-002

Dear Mr. Simon:

The following additional information is submitted in reference to:

2426-PFR-001

A further review of this Finding indicates some misunderstanding regarding how APS handles correspondence regarding licensing changes and design documents. The SAR documents, at this stage in the Project, are controlled by Bechtel PVNGS Engineering in accordance with Bechtel and APS Engineering procedures. The changes to the SAR are initiated by formal letter request from APS or Bechtel initiates SAR changes from the receipt of NRC correspondence that is automatically copied to Bechtel Licensing from the APS Document Distribution Procedures No. NS-1, Revision 5 and NS-9, Revision 6. Changes, if required, are then initiated and processed in accordance with APS and Bechtel procedures. The Bechtel procedures require a review of the SAR change to determine what other design documents will be affected by the SAR change. This activity is a line item on the Bechtel SAR Design Change Checklist.

2426-PFR-007

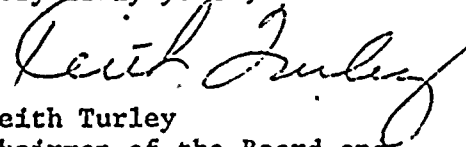
The apparent root cause of this Finding was that personnel were transferred out of existing QA/QC organizations to the new Start-Up QA/QC Unit that was organized in June, 1982. Consequently, the authorized positions were not filled.

Mr. W. A. Simon
Project Manager
Torrey Pines Technology
ANPP-22099-JAR
October 25, 1982
Page 2

2426-PFR-014 and 2426-PFR-017

The apparent root cause of this Deficiency is that the existing procedures were inadequate in that they did not cover the inspection of rework in the proper sequence.

Very truly yours,



Keith Turley
Chairman of the Board and
Chief Executive Officer

KT:skc

cc: O. M. DeMichele
T. G. Woods, Jr.
E. E. Van Brunt, Jr.
G. C. Andognini
J. A. Roedel
W. E. Ide



TORREY PINES TECHNOLOGY
P.O. Box 81608
San Diego, California 92138
Telephone: (714) 455-2654

A DIVISION OF GA Technologies Inc.
P.O. BOX 81608
SAN DIEGO, CALIFORNIA 92138

TPT:191:WAS:82
November 12, 1982

Mr. Keith L. Turley
Chairman and Chief
Executive Officer
Arizona Public Service Company
411 N. Central Avenue
Phoenix, Arizona 85004

Subject: Review of Corrective Action Plans

Dear Mr. Turley:

Enclosed are completed Review of Corrective Action Plans for the following
Potential Finding Reports:

2426-PFR-001

2426-PFR-007

2426-PFR-011

2426-PFR-012

2426-PFR-013

2426-PFR-014

2426-PFR-025

2426-PFR-027

2426-PFR-037

2426-PFR-039

2426-PFR-040

2426-PFR-043

2426-PFR-050

2426-PFR-065


2426-PFR-074

2426-PFR-083

2426-PFR-089

Please call me if you have any questions.

Sincerely,


W. A. Simon
Project Manager

cc: J. Roedel/APS
E. E. Van Brunt/APS
G. L. Wessman/TPT

REVIEW OF CORRECTIVE ACTION PLAN

PFR NO. 2426-001 REVISION A CAP NO. P-82-2-D

AFFECTED ITEM:

Control of design criteria that may depend on licensing commitments.

REVIEW & COMMENT BY GA INITIATOR:

DOES THE PLAN INDICATE FULL UNDERSTANDING OF THE PROBLEM? YES ☒ NO ☐
 DOES THE PLAN ADDRESS THE PROBLEM IN ENOUGH DETAIL? YES ☒ NO ☐
 DOES THE PLAN INDICATE ACCEPTABLE CORRECTIVE ACTION? *See below* YES ☐ NO ☐
 DOES THE PLAN INDICATE CORRECTION OF SIMILAR PROBLEMS? YES ☐ NO ☒

OTHER COMMENTS:

- (1) The response is not a plan.
 (2) If the information that is now available had been provided by the ODO in initial response to PFR, it would have resulted in my recommendation to invalidate the PFR.
 (3) The only thing that could be improved is that Turley's comments in his letter to Simon of 10/25/82 reference how APS Procedures NS-1 and NS-9 assure Bechtel's receipt of NRC correspondence. I cannot find such a requirement in the referenced procedures.

REVIEWED BY:

M. Graham

DATE:

10/29/82

REVIEW & COMMENT BY GA TASK LEADER

Agree with above

REVIEWED BY:

J. Derrill

DATE:

10/29/82

COMMENTS BY FINDINGS REVIEW COMMITTEE:

The information now available from APS resolves the problem.

BY:

S. L. Kowitz

DATE:

10/29/82

COMMENTS BY GA PROJECT MANAGER:

*Agree that this PFR should not have been a
 Finding. Apparently there was a
 mis understanding.*

BY:

W. A. Simon

DATE:

4-5-82

Arizona Public Service Company

P.O. BOX 21606 • PHOENIX, ARIZONA 85036

October 6, 1982

ANPP-21951-JAR

Mr. W. A. Simon
Project Manager
Torrey Pines Technology
10955 John J. Hopkins Drive
San Diego, California 92121

Subject: Potential Finding Reports Classified as "Findings"

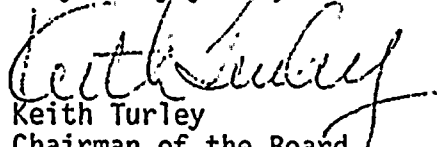
re: TPT:158:WAS:82, dated 9/23/82, Subject: as above

Dear Mr. Simon:

We have reviewed the Potential Findings classified as "Findings" transmitted by the referenced letter and have prepared specific corrective action plans for each item. As a vehicle for preparation of the corrective action plans and disposition of these findings, we have utilized the existing APS Corrective Action Report form and will utilize the existing appropriate QA procedures for tracking and closing the items.

Attached for your review are the corrective action plans for PFR's 001, 007, 014 and 027. If you have any questions regarding these plans, please contact Ed Van Brunt or John Roedel.

Very truly yours,


Keith Turley
Chairman of the Board
and Chief Executive Officer

KT:mft

Attachments

cc: O. M. De Michele w/attach.
T. G. Woods, w/attach.
E. E. Van Brunt, w/attach.
G. C. Andognini, w/attach.
J. A. Roedel, w/attach.



CORRECTIVE ACTION REPORT

Page 1 of 2

Classification of Adverse Condition: (See Back of Form) <input type="checkbox"/> NONCOMPLIANCE <input checked="" type="checkbox"/> Deviation		CAR No. P-82-1-D
How Discovered: <input type="checkbox"/> Audit No. <input checked="" type="checkbox"/> Other		Reportability Evaluation: <input checked="" type="checkbox"/> Not Reportable <input type="checkbox"/> REF No.
Organization Responsible: Corporate QA	Date Discovered: August 25, 1982	Date Reply Due: October 25, 1982
Initiator(s): TPT/GA	Controlling Document: N/A	Discussed With: N/A
Requirement: N/A		
Description of Adverse Condition: Refer to Attachment 1, "Potential Finding Report 2426-PFR-007"		
Recommended Corrective Action: See Continuation Sheet		
Corrective Action - Including Action to Prevent Recurrence: (See Back of Form)		
Prepared By: _____ Authorized By: _____ Date: _____		
Corrective Action Evaluation: Comments Acceptable _____ Not Acceptable _____ Verification Required YES _____ NO _____ Cause - see APS letter of October 25, 1982. Evaluator: _____ Date: _____		
Verification: Comments Acceptable _____ Not Acceptable _____ Evaluator: _____ Date: _____		



CORRECTIVE ACTION REPORT
CONTINUATION SHEET

CAR No. P-82-1-D

Page 2 of 2

Organization Responsible: Corporate QA	Date Discovered: August 25, 1982	Date Reply Due: October 25, 1982
---	-------------------------------------	-------------------------------------

Recommended Corrective Action:

1. Review planned staffing for PVNGS Construction QA/QC and Quality Systems and Programs to assure the staffing is adequate to fully implement Corporate Quality Assurance responsibilities, including the specific items (1) review of Quality Assurance Manuals and revisions status; (2) review the schedules and completions of surveillances and audits; and (3) review the schedules and completeness of the Corporate QA Procedures.
2. Review status of present staffing versus budgeted manpower levels.
3. Implement and expedite hiring plans, if required.

Arizona Public Service Company

P.O. BOX 21855 • PHOENIX, ARIZONA 85038

CAP P-82-1-D

Pg. 4

October 25, 1982

ANPP-22099-JAR

Mr. W. A. Simon
Project Manager
Torrey Pines Technology
10955 John J. Hopkins Drive
San Diego, California 92121

Subject: Potential Findings Reports Classified As "Findings"
File: 82-003-002

Dear Mr. Simon:

The following additional information is submitted in reference to:

2426-PFR-001

A further review of this Finding indicates some misunderstanding regarding how APS handles correspondence regarding licensing changes and design documents. The SAR documents, at this stage in the Project, are controlled by Bechtel PVNGS Engineering in accordance with Bechtel and APS Engineering procedures. The changes to the SAR are initiated by formal letter request from APS or Bechtel initiates SAR changes from the receipt of NRC correspondence that is automatically copied to Bechtel Licensing from the APS Document Distribution Procedures No. NS-1, Revision 5 and NS-9, Revision 6. Changes, if required, are then initiated and processed in accordance with APS and Bechtel procedures. The Bechtel procedures require a review of the SAR change to determine what other design documents will be affected by the SAR change. This activity is a line item on the Bechtel SAR Design Change Checklist.

2426-PFR-007

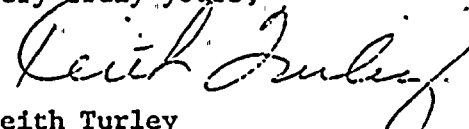
The apparent root cause of this Finding was that personnel were transferred out of existing QA/QC organizations to the new Start-Up QA/QC Unit that was organized in June, 1982. Consequently, the authorized positions were not filled.

Mr. W. A. Simon
Project Manager
Torrey Pines Technology
ANPP-22099-JAR
October 25, 1982
Page 2

2426-PFR-014 and 2426-PFR-017

The apparent root cause of this Deficiency is that the existing procedures were inadequate in that they did not cover the inspection of rework in the proper sequence.

Very truly yours,


Keith Turley
Chairman of the Board and
Chief Executive Officer

KT:skc

cc: O. M. DeMichele
T. G. Woods, Jr.
E. E. Van Brunt, Jr.
G. C. Andognini
J. A. Roedel
W. E. Ide



TORREY PINES TECHNOLOGY
P.O. Box 81608
San Diego, California 92138
Telephone: (714) 455-2654

A DIVISION OF GA Technologies Inc.
P.O. BOX 81608
SAN DIEGO, CALIFORNIA 92138

TPT:191:WAS:82
November 12, 1982

Mr. Keith L. Turley
Chairman and Chief
Executive Officer
Arizona Public Service Company
411 N. Central Avenue
Phoenix, Arizona 85004

Subject: Review of Corrective Action Plans

Dear Mr. Turley:

Enclosed are completed Review of Corrective Action Plans for the following
Potential Finding Reports:

2426-PFR-001

2426-PFR-007

2426-PFR-011

2426-PFR-012

2426-PFR-013

2426-PFR-014

2426-PFR-025

2426-PFR-027

2426-PFR-037

2426-PFR-039

2426-PFR-040

2426-PFR-043

2426-PFR-050

2426-PFR-065

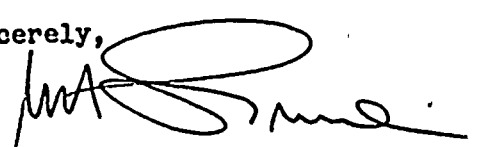
2426-PFR-074

2426-PFR-083

2426-PFR-089

Please call me if you have any questions.

Sincerely,


W. A. Simon
Project Manager

cc: J. Roedel/APS
E. E. Van Brunt/APS
G. L. Wessman/TPT

REVIEW OF CORRECTIVE ACTION PLAN

PFR NO. 2426-007 REVISION Issue A CAP NO. P-82-1-D

AFFECTED ITEM:

APS QA Department Staffing

REVIEW & COMMENT BY GA INITIATOR:

DOES THE PLAN INDICATE FULL UNDERSTANDING OF THE PROBLEM?	YES <input checked="" type="checkbox"/>	NO <input type="checkbox"/>
DOES THE PLAN ADDRESS THE PROBLEM IN ENOUGH DETAIL?	YES <input checked="" type="checkbox"/>	NO <input type="checkbox"/>
DOES THE PLAN INDICATE ACCEPTABLE CORRECTIVE ACTION?	YES <input checked="" type="checkbox"/>	NO <input type="checkbox"/>
DOES THE PLAN INDICATE CORRECTION OF SIMILAR PROBLEMS?	YES <input checked="" type="checkbox"/>	NO <input type="checkbox"/>

OTHER COMMENTS:

NONE

REVIEWED BY: T. R. ColandreaM. H. HornerDATE: 10/8/82

REVIEW & COMMENT BY GA TASK LEADER

Agree with aboveREVIEWED BY: J. B. BurrellDATE: 10/8/82

COMMENTS BY FINDINGS REVIEW COMMITTEE:

CAP is acceptable.BY: S. A. KouzDATE: 11/3/82

COMMENTS BY GA PROJECT MANAGER:

CAP is acceptable.BY: [Signature]DATE: 11/8/82

Arizona Public Service Company

P.O. BOX 21666 • PHOENIX, ARIZONA 85036

October 20, 1982

ANPP-22046-JAR

Mr. W. A. Simon
Project Manager
Torrey Pines Technology
10955 John J. Hopkins Drive
San Diego, California 92121

Subject: Potential Finding Reports Classified as "Findings"
File: 82-003-002

Dear Mr. Simon:

We have reviewed the Potential Findings classified as "Findings" and have prepared specific corrective action plans for each item.

Attached for your review are the corrective action plans for Potential Finding Reports (PFR's) No. 011, 012, 013, 025, 037, 039, 040 and 043.

Very truly yours,


Keith Turley
Chairman of the Board and
Chief Executive Officer

KT:mft

Attachments

cc: O. M. De Michele
T. G. Woods, Jr.
E. E. Van Brunt, Jr.
G. C. Andognini
J. A. Roedel
W. E. Ide

aps.

CORRECTIVE ACTION REPORT

Page 1 of 23

Classification of Adverse Condition: (See Back of Form) <input type="checkbox"/> NONCOMPLIANCE <input checked="" type="checkbox"/> Deviation		CAR No. C82-14-D
How Discovered: <input type="checkbox"/> Audit No. <input checked="" type="checkbox"/> TORREY PINES AUDIT <input checked="" type="checkbox"/> Other PFR-011		Reportability Evaluation: <input checked="" type="checkbox"/> Not Reportable <input type="checkbox"/> REF No.
Organization Responsible: BECHTEL CORP.	Date Discovered: August 3, 1982	Date Reply Due: 9/3/82
Initiator(s): L. Souza	Controlling Document: WPP/ 3:0 "Field Control of Design Documents" Section 5 WPP/QCI 302.0 APPENDIX I (con't. pg.2)	Discussed With: D. Hawkinson R. Grant V. Mallen
Requirement: 1.) It shall be the responsibility of the QCE's or Discipline FE's to control and ensure they are working with the latest design drawings as listed on the DNL (Daily Notification List) or FRL (Field Revision Log) (con't. pg.2)		
Description of Adverse Condition: Contrary to the Above: The document revisions, DCN's, FCR's was not followed on the CIP's dated 5/6/82 and 2/24/82 for 1-J-AFB-FT-41B. Listed are the documents as listed and the appliance FRL & DNL listings: (con't. pg. 2)		
Recommended Corrective Action: 1.) Review a sample of Unit 1,2, & 3 CIP's in the vault for document revisions... Document results. Based on result, determine extent of problem. Discuss corrective action to be taken with APS/QA. 2.) Reinspect installation to latest drawing revisions and configuration. 3.) Train personnel to importance of utilizing and recording latest drawing (con't pg.2)		
Corrective Action - Including Action to Prevent Recurrence: (See Back of Form) See attached page 3 of 3		
Prepared By: <u>[Signature]</u> Authorized By: <u>[Signature]</u> Date: <u>8/4/82</u>		
Corrective Action Evaluation: Comments: Acceptable <input checked="" type="checkbox"/> Not Acceptable <input type="checkbox"/> Verification Required YES <input checked="" type="checkbox"/> NO <input type="checkbox"/> The root cause of this Deficiency was the issuance of the DNL/FRL in the afternoon of the effective date as addressed in Item 4, page 3. Evaluator: <u>[Signature]</u> Date: <u>9.3.82</u>		
Verification: Comments: Acceptable <input type="checkbox"/> Not Acceptable <input type="checkbox"/> Evaluator: _____ Date: _____		

aps

CORRECTIVE ACTION REPORT
CONTINUATION SHEET

CAR No. 82-14-D

Page 2 of 3

Organization Responsible: BECHTEL CORP.	Date Discovered: August 3, 1982	Date Reply Due: 9/3/82
--	------------------------------------	---------------------------

Controlling Documents, con't. form page 1.:

Instrument Installation Section C.5

Requirement, con't from page 1.:

2.) On the Construction Inspection Planning (CIP), the IAFE is to enter the document number(s) and revision number(s) appropriate to the work being performed. He is to list all related document revisions, DCN's and FCR's that are not listed on the FRL or DNL at the time of installation, and list FCR's that are approved as field option and used in the construction of a specific activity. During inspection and prior to acceptance, the responsible IAFE and QCE are to verify that they are working to the latest revision of the documents including all applicable FCR's and DCN's.

Description of Adverse Condition, con't from page 1.:

Drawing	IAFE/QCE Entry on CIP 5/5/82	FRL/DNL Listing 5/5/82
13-J-ZMF-001	Rev. 2 (incorrect)	Rev. 3 DCN 3-13, 4-13
13-J-04D-117	Rev. 1 (incorrect)	Rev. 2 FCR 30606J-01 FCR 36499J-01
13-M-AFP-001	Rev. 9 (5 DCN's total correct)	Rev. 9
	IAFE/QCE Entry on CIP 2/24/82	FRL/DNL Listing 2/19/82 to: 2/24/82
13-J-ZMF-001	Rev 2 (correct)	Rev 2 DCN1 DCN2
13-J-04D-117	Rev 0 (incorrect) FCR 30606J	Rev 1 DCN2 FCR 30606-5
13-M-AFP-001	Rev 9 (correct)	Rev 9 DCN 27 DCN 29
13-P-AFF-133	Rev 6 (incorrect)	Rev 7 FCR 11075P or FCR 14156P13
13-J-ZZS-157	Rev 1 (correct)	Rev 1
13-J-ZZS-161	Rev 2 (incorrect)	Rev 1 FCR 11889-J-13

Recommended Corrective Action (Cont.):

per procedural requirements.

CORRECTIVE ACTION REPORT
CONTINUATION SHEET

CAR No. C-82-14 D

Page 3 of 3

Organization Responsible: Bechtel	Date Discovered: August 3, 1982	Date Reply Due: Sept. 3, 1982
--------------------------------------	------------------------------------	----------------------------------

Corrective Action:

1. In addition to the incorrect Instrumentation CIP's a review of approximately 1500 CIP's from all disciplines (i.e. Mech, welding, coatings etc.) were examined for this condition. Five (5) % were found to be similar of this finding. After re-inspection in no case was the components or installations different than latest revision drawings. These results were discussed with APS/QA on 8-24-82.
2. Items listed as incorrect on the QAF have been corrected to the latest Rev and re-inspected.
Note: In all cases the installation was in conformance to latest drawings.
3. Inspectors were re-instructed for this condition.
4. The extent of this problem is very minimal. In most cases the inspector has the drawing and DCN's, FCR's which became the last Rev of the drawing. The revision might arrive on site on or near the time of the inspection cycle. However major emphasis will be expended by inspection to alleviate this matter in the future. DDCC will indicate the effective date on the DNL, which will allow time for receipt and distribution.

*not same
same day as work
was complete*

*dated effective
date in future*

Arizona Public Service Company

P.O. BOX 21666 • PHOENIX, ARIZONA 85036

November 3, 1982
ANPP-22190-JAR/TGWJr

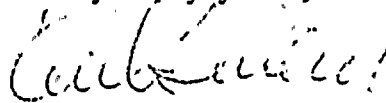
Mr. W. A. Simon
Project Manager
Torrey Pines Technology
19055 John J. Hopkins Drive
San Diego, California 92121

Subject: Potential Finding Report No. 011
File: 82-003-002

Dear Mr. Simon:

Enclosed, is additional specific corrective action for Potential Finding No. 011.

Very truly yours,


Keith Turley
Chairman of the Board and
Chief Executive Officer

KLT/skc

Enclosure

cc: O. M. DeMichele
T. G. Woods, Jr.
E. E. Van Brunt, Jr.
G. C. Andognini
J. A. Roedel
W. E. Ide

1AFOI

CAP 882-14-D Pg. 6

PALO VERDE NUCLEAR GENERATING STATION		1. PAGE <u>1</u> OF <u>1</u>	2. NO. <u>30,606-J</u>	13A. DCNNO. <u>NA</u>
FIELD CHANGE REQUEST JOB NO. 10407		QUALITY CLASS <u>C</u>	3. MO DAY YR <u>12/16/81</u>	13B. SCNNO. <u>NA</u>
4. REF DWG OR SPEC <u>13-J-04D-117</u>	REV <u>0</u>	5. TITLE <u>MSSS ISO KFA-FT-0405 & AFB-FT-041B SENSING LINE</u>		
6. DESIGN ORIGIN: <input checked="" type="checkbox"/> ENGINEERING <input type="checkbox"/> SUPPLIER (IDENTIFY BY NAME)		7. <input checked="" type="checkbox"/> UNIT 1 <input type="checkbox"/> UNIT 2 <input type="checkbox"/> UNIT 3 <input type="checkbox"/> COMMON		
8. EXISTING CONDITION <u>TO MAINTAIN THE LOCATION OF ANCHOR "A" AND THE HOSE CONFIGURATION AS SHOWN IN ANCHOR "A" LOCATION DETAIL, DETAIL (C) CANNOT BE BUILT AS SHOWN. TUBE STEEL WAS TOO SHORT AS SHOWN ON DWG.</u>				
9. CHANGE REQUEST/SKETCH <u>AT CO-ORD [G-3] AS BUILT QAS</u> <u>CHANGE TO</u>				
<p><u>WAS</u></p> <p>SECTION (C)</p>		<p>SECTION (C)</p>		
<p>Work commenced by direction of the authorized AFE and verbal concurrence by RE or designee.</p> <p>Unit FCR Control No. <u>11-650</u></p> <p><u>12-17-81</u> <u>12/17/81</u></p>				
10. REVIEWED BY: <u>L. Black</u>		11. PREPARED BY: <u>W. FERGUSON</u>		
DISCIPLINE FIELD ENGINEER <u>NA</u>		PROJECT FIELD ENGINEER <u>NA</u>		
DATE <u>12/22/81</u>		DATE <u>12/23/81</u>		
13. BECHTEL ENGINEERING <input checked="" type="checkbox"/> APPROVED <input type="checkbox"/> DISAPPROVED		NUCLEAR GROUP SUPERVISOR (IF REQUIRED) <u>NA</u>		
GROUP SUPERVISOR <u>W. Ferguson</u>		DATE <u>12-29-81</u>		
PROJECT ENGINEER <u>J. Beale</u>		DATE <u>12-29-81</u>		
REMARKS		<p>POAE (O-LISTED P&I AND SINGLE LINE DWGS) <u>NA</u></p> <p>(QUALITY CLASS Q AND R SPECS) <u>NA</u></p> <p>DATE <u>12 22 1982</u></p>		
DISTRIBUTION: ORIGINAL - PRINT COORDINATOR; COPIES TO - CLIENT, SURVEY, DISCIPLINE, AND RESIDENT ENGINEER		CONSTRUCTION PVNGS		
ADDITIONAL DISTRIBUTION: <input type="checkbox"/> PROJECT PROCUREMENT MANAGER <input type="checkbox"/> COST TREND ENGINEER				

1AFO1

09/11

PALO VERDE NUCLEAR GENERATING STATION		1. PAGE <u>1</u> OF <u>1</u>	2. NO. <u>30,606-T</u>	13A. DCN NO. <u>1/A</u>
FIELD CHANGE REQUEST JOB NO. 10407		QUALITY CLASS <u>Q</u>	3. MO DAY YR DATE <u>12 14 81</u>	13B. SCN NO. <u>1/A</u>
4. REF DWG OR SPEC <u>13-J-04D-117</u>		5. TITLE MSSD <u>150 KVA-FT-040 B</u> <u>AFE-FT-041B</u>		
6. DESIGN ORIGIN: <input checked="" type="checkbox"/> ENGINEERING <input type="checkbox"/> SUPPLIER (IDENTIFY BY NAME)		7. <input checked="" type="checkbox"/> UNIT 1 <input type="checkbox"/> UNIT 2 <input type="checkbox"/> COMMON		
8. EXISTING CONDITION <u>TO MAINTAIN THE LOCATION OF ANCHOR "A"</u> <u>AND THE HOIST CONFIGURATION AS SHOWN IN</u> <u>ANCHOR "A" LOCATION DETAIL, DETAIL (C) CANNOT</u> <u>BE BUILT AS SHOWN. TUBE STEEL WAS TOO SHORT</u> <u>AS SHOWN ON DWG.</u>				
9. CHANGE REQUEST/SKETCH <u>AT CO-ORD [G-3]</u> <u>AS BUILT</u> <u>CHANGE TO:</u>				
<div style="display: flex; justify-content: space-around;"> <div style="width: 45%;"> <p><u>WAS</u></p> <p>SECTION (C)</p> </div> <div style="width: 45%;"> <p>SECTION (C)</p> </div> </div> <p>Work commenced by direction of the authorized AFE and verbal concurrence by RE or designee. Unit FCR Control No. <u>12-650</u> <u>12-650</u></p>				
10. REVIEWED BY: <u>[Signature]</u> DISCIPLINE FIELD ENGINEER <u>12-650</u>		11. CONTACTED DATE <u>12/14/81</u> PREPARED BY <u>W. F. [Signature]</u>		
12. APPROVAL OF FIELD DISPOSITION <u>[Signature]</u> PROJECT FIELD ENGINEER <u>12/14/81</u>				
13. BECHTEL ENGINEERING: <input checked="" type="checkbox"/> APPROVED <input type="checkbox"/> DISAPPROVED <u>[Signature]</u> GROUP SUPERVISOR <u>[Signature]</u> PROJECT ENGINEER		<u>12-650</u> DATE <u>12-79-81</u> DATE <u>12-79-81</u>		
REMARKS				
DISTRIBUTION: ORIGINAL - PRINT COORDINATOR. COPIES TO - CLIENT, SURVEY, DISCIPLINE, AND RESIDENT ENGINEER				
ADDITIONAL DISTRIBUTION: <input type="checkbox"/> PROJECT PROCUREMENT MANAGER <input type="checkbox"/> COST TREND ENGINEER				

Ag. 8

[Signature]

MOc 196335

RES. ENG. CITIZEN 4216.82

FIELD TO MAKE THE FOLLOWING
MODIFICATIONS AS SHOWN ON
ATTACHED SKETCHES.

Work commenced by direction of the authorized
AFE and verbal concurrence by RE or designee.

Unit: FCR Control No. 1T 956
D. K. Harris . FREQ 6 APR 82
 LD/FE/AF/DATE RE CONTACTED/DATE
6 APR 82

 $3/8" \phi$

10. REVIEWED BY: FCR TREND # UC

N/A

DISCIPLINE FIELD ENGINEER

DATE _____

2/4

DISCIPLINE FIELD ENGINEER

DATE _____

13. ECHELTEL ENGINEERING ☒ APPROVED ☐ DISAPPROVED

N/A

~~GROUP SUPERVISOR~~

DATE _____

PROJECT ENGINEER

DATE

02AF IG-LISTED PAI AND SINGLE LINE RWGS

REMARKS: Dist. number shown is for boat 1 only.

Issue FCR as applicable to Unit 1, 2, & 3

10. DISTRIBUTION: ORIGINAL - BUREAU; COORDINATOR; COPIES TO - CLIENT SURVEY, DISCIPLINE, AND RESIDENT ENGINEER.

PROJECT PROCUREMENT MANAGER

111.

PREPARED BY: DAVE UNDERG

12. APPROVAL OF FIELD DISPOSITION:

PROJECT FIELD ENGINEER

RECEIVED

11/5

APR 28 1982

NUCLEAR GROUP SUPERVISOR (IF REQUIRED)

N/G

CONSTRUCTION

02AF IG-LISTED PAI AND SINGLE LINE RWGS

is for about 1 only.

FCR #.36.499-J

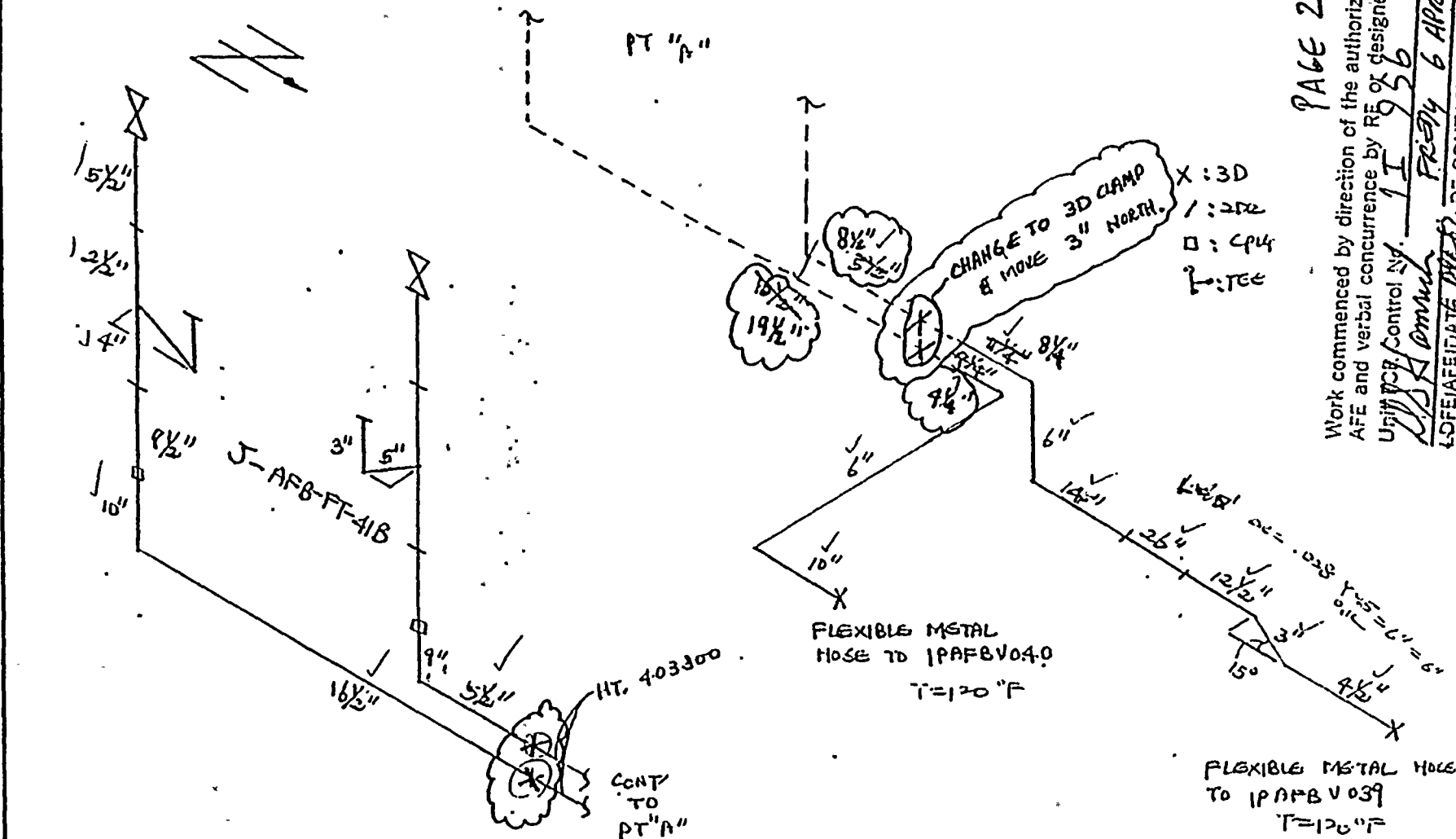
ISO # 13-J-04-D-117

PROJECT ANPP

SUBJECT INSTRUMENTATION TUBING / MISS

PAGE 1 OF 2

ADDITIONAL INFORMATION ON ISOMETRIC DATA AND DETAIL SHEETS



PAGE 2

Work commenced by direction of the authorized AFE and verbal concurrence by RE or designee.

Unit VCB/Control No.

U.S. A. Omaha
Priority 6 APR 82

CAD 182-14-D pg. 9

[illegible]

RECHTEL 208 MO
- 10407

JOB NO. 10407

ISO# 13-J-04.D-117

PROJECT

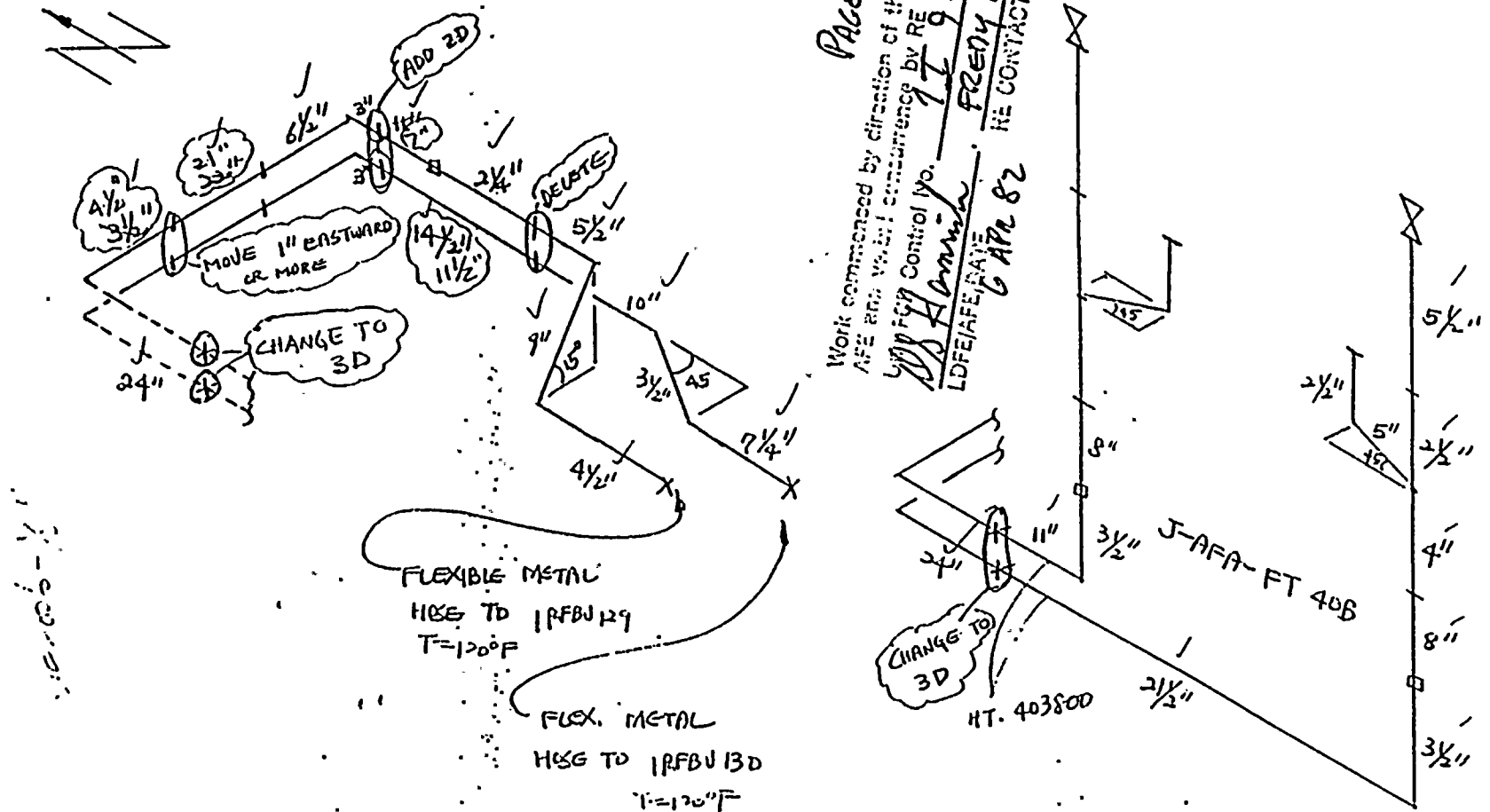
ANFP

SUBJECT

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1021

PAGE 2 OF 2

(ADDITIONAL INFORMATION ON ISOMETRIC DATA AND DETAIL SHEETS)

Page 3

Work commenced by direction of the authorized
AFE and verbal concurrence by RE or designee
1021

by citation of the authorized
concurrent by RE or designer.

DATE/AF/DATE
6 APR 83
136
FRENY 6 APR 83
RE CONTACT

DATE	TIME	LOCATION	WIND DIRECTION	WIND SPEED	WAVE HEIGHT	SEA STATE	WATER TEMPERATURE	AIR TEMPERATURE	RELATIVE HUMIDITY	VISIBILITY	WEATHER	REMARKS
10/10/2023	08:00	10°N 105°E	030	15	1.5	3	28.5	30.0	85	10	Partly Cloudy	Good
10/10/2023	12:00	10°N 105°E	030	15	1.5	3	28.5	30.0	85	10	Partly Cloudy	Good
10/10/2023	16:00	10°N 105°E	030	15	1.5	3	28.5	30.0	85	10	Partly Cloudy	Good
10/10/2023	20:00	10°N 105°E	030	15	1.5	3	28.5	30.0	85	10	Partly Cloudy	Good
11/10/2023	08:00	10°N 105°E	030	15	1.5	3	28.5	30.0	85	10	Partly Cloudy	Good
11/10/2023	12:00	10°N 105°E	030	15	1.5	3	28.5	30.0	85	10	Partly Cloudy	Good
11/10/2023	16:00	10°N 105°E	030	15	1.5	3	28.5	30.0	85	10	Partly Cloudy	Good
11/10/2023	20:00	10°N 105°E	030	15	1.5	3	28.5	30.0	85	10	Partly Cloudy	Good

215

T

3

45

5/2

2

[illegible]

SECURITY JOB NO.

10407

RF-3143 '07) 8/78

CAP C82-14-D
Pg. 10

REWORK

2 573274①



REV. 9

PALO VERDE NUCLEAR GENERATING STATION UNITS 1, 2 & 3
CONSTRUCTION INSPECTION PLANNING FOR
INSTRUMENTATION INSTALLATION
JOB NO. 10407

PAGE 1 OF 2

WPP/QCI
NO. 302.0

1. UNIT NO. 1 2. STRUCTURE/LOCATION/ELEVATION M555 EL 81.0"
3. INSTRUMENT/COMPONENT NO. 01-J-AFB-FT-41B 4. DATE 5-6-82
5. DOCUMENTS: REV. DCN/SCN/FCR/NCR
- LOCATION DRAWING 13-J-ZMF-001 3-2 7/24/82
- ISOMETRIC 13-J-04D-117 2 FCR 36,499-J
- VENDOR DRAWING(S) _____
- P&I DWG 13-M-AFP-001 9 _____
- OTHERS _____
6. START-UP SUB-SYSTEM NO. 1AF01
7. QUALITY CLASS R 8. ASME CODE ☒ YES ☐ NO 9. PREPARED BY: J. DPT12

NO. 10	INSPECTION DESCRIPTION	11. QCE		12. AI	
		STAMP	DATE	STAMP	DATE
10.1	ITEM(S) LOCATED AND MOUNTED PER APPLICABLE DRAWING(S). MOUNTING BOLTS TORQUED TO <u>N/A</u> WRENCH SERIAL NO. <u>N/A</u> DUE DATE <u>N/A</u>	<u>N/A</u>	<u>5-6-82</u>		
10.2	BASE BOLTS GROUTED	<u>N/A</u>	<u>5-6-82</u>		
10.3	INSTRUMENT & TUBING SUPPORTS PER APPLICABLE DRAWING(S). INSTALLATION BOLTS AND CONCRETE EXPANSION ANCHORS TORQUED TO <u>WPP/QCI 302.0 PARA 4.3 and WPP/QCI 24.1 EXH. 24.1.2</u> WRENCH SERIAL NO. <u>JMA-0532</u> DUE DATE <u>6/3/82</u> <u>JMA DBLB</u> <u>8-7-82</u>		<u>WY 6 '82</u>		
10.4*	WELDING COMPLETE. WFE INITIALS <u>N/A</u> DATE <u>N/A</u>	<u>N/A</u>	<u>5-6-82</u>		
10.5	PROCESS/SINGAL LINE(S) INSTALLED PER APPLICABLE DWG. PROCESS LINE NO. <u>B-006-DEBA-6" NARC, NARD</u> ROOT VALVE TAG NO(S) <u>1PAEB V039, 1PAEB V040</u> SLOPE DEVIATION APPROVAL PER FCR NO. <u>N/A</u>	<u>N/A</u>	<u>5-6-82</u>		
10.6	ITEM(S) IDENTIFIED PER APPLICABLE DRAWING.		<u>WY 6 '82</u>		

* REFERENCE WELDING DETAIL DWGS. IN REMARKS SECTION.

13. REMARKS: This CIP covers Re-work per DOP #155-CH-089,
NOR # JX-512 AND NOR # JX-521 FCR 36,499-J
Flex hose #703 WAS installed Replacing Flex hose #
which is suspected to be damaged. JMD 5-7-82
** 10.3 INSTALLATION RE-INSPECTED 8-6-82

REWORK

14. IAFE JMD 5-6-82 15. QCE WY 6 '82 16. AI WY 10 '82
- INITIALS/DATE STAMP/DATE STAMP/SIGNATURE, DATE

PAGE 2 OF 2

[illegible]

THERMOWELLS:

13. HEAT NO.	19. FLANGE HEAT NO.	20. 13-JM-556 DATA SHEET NO.	21. THERMOWELL WELD NO(S).	22. FLANGE WELD NO(S).
N/A	N/A	N/A	N/A	N/A
23. THERMOWELL ID TAG NO.	24. THERMOWELL FLANGE ID TAG NO.			
N/A	N/A			

[illegible]

RECEIVED
MAY 14 1982
QC-BCC



REV. 9

PALO VERDE NUCLEAR GENERATING STATION UNITS 1, 2 & 3
CONSTRUCTION INSPECTION PLANNING FOR
INSTRUMENTATION INSTALLATION
JOB NO. 10407

PAGE 1 OF 2

WPP/QCI
NO. 302.0

1. UNIT NO. 1 2. STRUCTURE/LOCATION/ELEVATION MSSS EL. 81'0" 2 CAE
3. INSTRUMENT/COMPONENT NO. 1-J-AFB-FT-41B 4. DATE 11/21/82
5. DOCUMENTS: REV. DCN/SCN/FCR/NGR
LOCATION DRAWING 13-J-2MF-001 2
ISOMETRIC 13-J-04D-117 Ø 1" FLR 30,606-J
VENDOR DRAWING(S) N/A
P&I DWG 13-M-AFP-001 9
OTHERS: 13-P-AFP-133 8-26-82
6. START-UP SUB-SYSTEM NO. 1-2-82 AFOT IAFOI

7. QUALITY CLASS Q 8. ASME CODE ☒ YES ☐ NO 9. PREPARED BY: DAN HAYES

NO. 10	INSPECTION DESCRIPTION	11. QCE		12. AI	
		STAMP	DATE	STAMP	DATE
10.1	ITEM(S) LOCATED AND MOUNTED PER APPLICABLE DRAWING(S). MOUNTING BOLTS TORQUED TO <u>WPP/QCI No. 302.0 para. 4.3</u> WRENCH SERIAL NO. <u>JMA-0532</u> DUE DATE <u>3/23/82</u>		FEB 24 '82		
10.2	BASE BOLTS GROUTED	N/A	N/A		
10.3	INSTRUMENT & TUBING SUPPORTS PER APPLICABLE DRAWING(S). INSTALLATION BOLTS AND CONCRETE EXPANSION ANCHORS TORQUED TO <u>WPP/QCI No. 302.0 Para. 4.3 and/or WPP/QCI</u> <u>No. 24.1 Exhibit 24.1-2 as applicable.</u> WRENCH SERIAL NO. <u>JMA-0532</u> DUE DATE <u>3/23/82</u> <u>JMA-0818</u> <u>6-7-82</u>		FEB 24 '82		
10.4	WELDING COMPLETE. WFE INITIALS <u>JCF</u> DATE <u>2/1/82</u>		2/2/82		
10.5	PROCESS/SINGAL LINE(S) INSTALLED PER APPLICABLE DWG. PROCESS LINE NO. <u>8006-DCBA-6" N-000 & N-000</u> ROOT VALVE TAG NO(S) <u>V-039 & V-040</u> SLOPE DEVIATION APPROVAL PER FCR NO. <u>N/A</u>		FEB 24 '82		
10.6	ITEM(S) IDENTIFIED PER APPLICABLE DRAWING.		FEB 24 '82		

* REFERENCE WELDING DETAIL DWGS. IN REMARKS SECTION.

13. REMARKS: THIS CIP FOR TUBING RUN ALSO
MOUNTING DETAILS
13-J-ZZS-157 REV 1 11/16/82
13-J-ZZS-161 2/18/82
* 10.3 INSTALLATION RE-INSPECTED 8-6-82
SZ MTL FTG
03 SB 18

THIS CIP DOES NOT COVER
DCN #1 TO 13-J-ZZS-139,
DOUBLE NUTTING PROCEDURE.

RETURNED FOR REWORK TAG NO 05686 STAMP 113 DATE 2/5/82
WELDING PER APPLICABLE 13-J-ZZS-XXX DRAWINGS

14. IAFE 1-28-82 15. QCE 193 FEB 24 '82 16. AI LHC FEB 24 '82
INITIALS/DATE STAMP/DATE STAMP/SIGNATURE, DATE

3/2/82

CORRECTIVE ACTION REPORT
CONTINUATION SHEET

CAR No. C-82-14D

Page 4 of 4

Organization Responsible: Bechtel	Date Discovered: 8/3/82	Date Reply Due: 9/3/82
--------------------------------------	----------------------------	---------------------------

Additional Corrective Action Evaluation:

In the response to PFR-011, FCR 30606J to drawing 13-J-04D-17 was not addressed. This situation has been investigated with the conclusion being that no discrepancy existed. The original CIP, inspected February 24, 1982 notes that FCR 30606J was used in the installation. Subsequent to that inspection FCR 36499J was generated and required a minor modification to meet the thermal expansion requirements. This work was performed and a new CIP generated to address this rework only. The inspection on May 6, 1982, was to verify the rework only and did not verify any other detail of the installation. This is indicated on the CIP by N/A in block 11 and by a note in the "Remarks" section of the CIP. This rework CIP was placed in the vault with the original CIP and must be used together with the original CIP to document the complete installation. Therefore, the addition of FCR 30606J (N/A Type), on the May 6, 1982, CIP, was not required since it was not used to complete the portion of rework inspected on May 6, 1982.

Additionally, on the corrective action to PFR-011, the root cause is noted as a problem with issuance and distribution of the FRL/DNL. This conclusion was based on the majority of the errors found in a review of the 1500 CIP's referenced on page 3 of CAR No. C-82-14D. It is noted that some of the errors noted during this review, as well as those found by TPT, were caused by:

1. Failure of the inspector to review the FRL/DNL and/or,
2. Failure of the inspector to update the CIP in accordance with the latest FRL/DNL drawing revision noted.

Since, as noted on page 3 of CAR No. C-82-14D, in no case was the component/installation found to differ from the latest drawing revision, it is concluded that in the majority of these instances the inspector reviewing the FRL/DNL, performed his inspection to the latest drawing revision, but did not update the CIP to the drawing revision actually used during the inspection. In either case, the corrective action noted in item 3 of page 3 to CAR No. C-82-14D, which included reinstruction of personnel, should resolve this problem in the future.

Wilde
11-4-82



TORREY PINES TECHNOLOGY
P.O. Box 81608
San Diego, California 92138
Telephone: (714) 455-2654

A DIVISION OF GA Technologies Inc.
P.O. BOX 81608
SAN DIEGO, CALIFORNIA 92138

TPT:191:WAS:82
November 12, 1982

Mr. Keith L. Turley
Chairman and Chief
Executive Officer
Arizona Public Service Company
411 N. Central Avenue
Phoenix, Arizona 85004

Subject: Review of Corrective Action Plans

Dear Mr. Turley:


Enclosed are completed Review of Corrective Action Plans for the following
Potential Finding Reports:

2426-PFR-001
2426-PFR-007
2426-PFR-011
2426-PFR-012
2426-PFR-013
2426-PFR-014
2426-PFR-025
2426-PFR-027
2426-PFR-037

2426-PFR-039
2426-PFR-040
2426-PFR-043
2426-PFR-050
2426-PFR-065
2426-PFR-074
2426-PFR-083
2426-PFR-089

Please call me if you have any questions.

Sincerely,


W. A. Simon
Project Manager

cc: J. Roedel/APS
E. E. Van Brunt/APS
G. L. Wessman/TPT

REVIEW OF CORRECTIVE ACTION PLAN

PFR NO. 2426-011 REVISION A CAP NO. C82-14-D

AFFECTED ITEM:

Flow Transmitter, 1-J-AFB-FT-41B.

REVIEW & COMMENT BY GA INITIATOR:

DOES THE PLAN INDICATE FULL UNDERSTANDING OF THE PROBLEM?

YES ☒ NO ☐

DOES THE PLAN ADDRESS THE PROBLEM IN ENOUGH DETAIL?

YES ☒ NO ☐

DOES THE PLAN INDICATE ACCEPTABLE CORRECTIVE ACTION?

YES ☒ NO ☐

DOES THE PLAN INDICATE CORRECTION OF SIMILAR PROBLEMS?

YES ☒ NO ☐

OTHER COMMENTS:

The CAR, with the page 4 continuation sheet, is adequate and the cause is correct.

REVIEWED BY: William H. Funke
W. FunkeDATE: 11-5-82

REVIEW & COMMENT BY GA TASK LEADER

Agree with above

REVIEWED BY: J. D. MerrillDATE: 11-5-82

COMMENTS BY FINDINGS REVIEW COMMITTEE:

CAP is acceptable.

BY: S. L. KoutzDATE: 11/5/82

COMMENTS BY GA PROJECT MANAGER

Agree. CAP is acceptable.

BY: MA [Signature]DATE: 11/9/82



Arizona Public Service Company

P.O. BOX 21856 • PHOENIX, ARIZONA 85036

October 20, 1982

ANPP-22046-JAR

Mr. W. A. Simon
Project Manager
Torrey Pines Technology
10955 John J. Hopkins Drive
San Diego, California 92121

Subject: Potential Finding Reports Classified as "Findings"
File: 82-003-002

Dear Mr. Simon:

We have reviewed the Potential Findings classified as "Findings" and have prepared specific corrective action plans for each item.

Attached for your review are the corrective action plans for Potential Finding Reports (PFR's) No. 011, 012, 013, 025, 037, 039, 040 and 043.

Very truly yours,


Keith Turley
Chairman of the Board and
Chief Executive Officer

KT:mft

Attachments

cc: O. M. De Michele
T. G. Woods, Jr.
E. E. Van Brunt, Jr.
G. C. Andognini
J. A. Roedel
W. E. Ide

CORRECTIVE ACTION REPORT

Page 1 of 14

Classification of Adverse Condition: (See Back of Form)

☐ NONCOMPLIANCE

☒ Deviation

CAR No. C82-15-D

How Discovered:

☐ Audit No.

TORREY PINES AUDIT

☒ Other PFR 012

Reportability Evaluation:

☒ Not Reportable

☐ REF No.

Organization Responsible:

BECHEL CORP.

Date Discovered:

July 28, 1982

Date Reply Due:

9/3/82

Initiator(s):

L. Souza

Controlling Document:

WPP/QCI 302. "Instrument Installation"

Section 4.3

WPP 7.0 Calibration and Control of Construction

Discussed With:

D. Hawkinson

R. Grant

V. Mallen

Requirement:

- 1.) The QCE shall verify that Quality Class Q and seismic class I instruments and tubing supports have been properly installed.
- 2.) The user of a calibration instrument is responsible to ensure that the instrument is of the correct type and range for the intended use.

Description of Adverse Condition:

Contrary to the Above:

A torque wrench (JMA-0199) with a 5 to 80 ft/lb range was used to torque 1/2, 3/8 & 1/2 inch bolts to valves of 45, 30 & 5 lbs. respectively. The 20% of maximum range for the torque wrench is 16 FT.lbs. and below. The wrench was used below its effective value for the 1/2" bolts. Listed are the instruments reviewed which contained this deficiency:

1-J-CTB-LT-36

1-J-AFB-FT-41A

1-J-CTB-LT-35

1-J-AFA-FT-40A

Recommended Corrective Action:

- 1.) Review all instrument CIP's Units 1,2,& 3 for similar situation. Identify those which were improperly torqued and retorqued.
- 2.) Document and specifically note those for which it can be determined were not at proper torque (i.e. move when retorquing)
- 3.) Train personnel to torque wrench requirements.

Corrective Action - Including Action to Prevent Recurrence: (See Back of Form)

See attached pages 3 and 4

Prepared By:

R. Grant

Authorized By:

R. Grant

Date:

8/11/82

Corrective Action Evaluation:

Comments

Acceptable ☒ Not Acceptable

Verification Required YES ☒ NO

The apparent root cause is: Lack of familiarity with vendor data on wrench.

Evaluator:

L. Souza

Date:

9-10-82

Verification:

Comments

Acceptable Not Acceptable

Evaluator:

Date:

QAF-4A (Rev. 0)

aps.

CORRECTIVE ACTION REPORT
CONTINUATION SHEET

CAR No. C82-15-D

Page 2 of 24

Pg. 3

Organization Responsible: BECHTEL CORP.	Date Discovered: July 28, 1982	Date Reply Due: 9/3/82
<u>Controlling Document:</u> <u>con't. from pg. 1</u> Measuring and Test Equipment Section 6.1.14 Proto Torque Wrench Tech Manual (#800)" page 7 <u>Requirement con't.:</u> 3.) Proto Torque Wrenches should not be used below 20% of the maximum range.		

Project PVNGS 10407	Organization Bechtel
----------------------------	-----------------------------

Identify Information

Corrective Action:

1. Review was completed of all CIP's in Q.C. Vault for referenced problem.
2. 47 installations were not torqued with a proper size torque wrench. (list below)

Instrument	T.W. S/N & Due Date		T.W. S/N & Due Date o.k. 10.1-10.3		Bolt Loose
1. 1-J-AFB-FT-41B	JMA-0818	8-7-82	T.W. already recorded		yes(1)
2. 41A	"	"			no
3. 1-J-CHA-LT-200	"	"			"
4. 1-J-CHB-LT 201	"	"			"
5. 1-J-CHA-LT-203A	"	"			"
6. 1-J-CHD-LT-203D	"	"			"
7. 1-J-CHB-LT 203B	"	"			"
8. 1-J-CHC-LT-203C	"	"			"
9. 1-J-AFB-FT-41A	"	"			"
10. 1-J-HCD-PT-352D	JMA0818	8-7-82	JMA0398	8-29-82	"
11. 1-J-HCD-PT-351D	JMA0818	8-7-82	JMA0398	8-29-82	"
12. 1-J-HCB-PT-352B	"	"			"
13. 1-J-HCB-PT-353B	"	"			"
14. 1-J-HCB-PT-351B	"	"			"
15. 1-J-EWB-FT-152	"	"			"
16. 1-J-CHN-LT-251	"	"			"
17. 1-J-AFA-FT-40A	"	"			"
18. 1-J-CHA-PSL-218A	"	"			"
19. 1-J-CHB-FT-212	"	"			"
20. 1-J-AFA-FT-40B	"	"			"
21. 1-J-AFA-FT-40A	"	"			"
22. 1-J-CHA-PT-212	"	"			"
23. 1-J-CHB-PSL-218	"	"			yes (4)
24. 1-J-HCC-PT-351C	"	"			no
25. 1-J-HCA-PT-353A	"	"			"
26. 1-J-HCA-PT-352A	"	"			"
27. 1-J-HCA-PT-351A	"	"			"
28. 1-J-DGB-PY-008	"	"			"
29. 1-J-DGB-PY-006	"	"			"
30. 1-J-DGB-PY-004	"	"			"

Project WNGS 10407	Organization Bechtel
-----------------------	-------------------------

Identify Information

Instrument	T.W. S/N & Due Date	T.W. S/N & Due Date o.k. 10.1-10.3 wrench already recorded	Bolt Loose
31. 1-J-DGB-PY-002	JMA-0818 8-7-82		no
32. 1-J-DGB-PY-02,04,06&08	"	"	"
33. 1-J-DGA-PY-007	"	"	"
34. 1-J-DGA-PY-005	"	"	"
35. 1-J-DGA-PY-003	"	"	"
36. 1-J-DGA-PY-001	"	"	"
37. 1-J-DGA-PY-01,02,05&07	"	"	"
38. 1-J-AFN-PSL-023	"	"	"
39. 1-J-AFB-PT-17	"	"	"
40. 1-J-AFA-PT-18	"	"	"
41. 1-J-CTB-LT-36	"	"	"
42. 1-J-CTA-LT-35	"	"	"
43. 1-J-ZCE-A05	"	"	"
44. 1-J-ZCE-A03	"	"	"
45. 1-J-ZCE-A01	"	"	"
46. 1-J-CHN-PT-256	05.2 File #1	"	"
47. 1-J-CHN-PT-255	"	"	"

2. a) Each installation was re-inspected and found acceptable, without movement of bolt, except 1 each (1-J-AFB-PT-41B) and 4 each (1-J-CHB-PSL-218).

b) All documentation of this inspection is noted on referenced CIP's and filed in the Q.C. vault.

3. All personnel trained on WPP/QCI 302. and documented on 8-10-82.



TORREY PINES TECHNOLOGY
P.O. Box 81608
San Diego, California 92138
Telephone: (714) 455-2654

A DIVISION OF GA Technologies Inc.
P.O. BOX 81608
SAN DIEGO, CALIFORNIA 92138

TPT:191:WAS:82
November 12, 1982

Mr. Keith L. Turley
Chairman and Chief
Executive Officer
Arizona Public Service Company
411 N. Central Avenue
Phoenix, Arizona 85004

Subject: Review of Corrective Action Plans

Dear Mr. Turley:

Enclosed are completed Review of Corrective Action Plans for the following
Potential Finding Reports:

2426-PFR-001

2426-PFR-007

2426-PFR-011

2426-PFR-012

2426-PFR-013

2426-PFR-014

2426-PFR-025

2426-PFR-027

2426-PFR-037

2426-PFR-039

2426-PFR-040

2426-PFR-043

2426-PFR-050

2426-PFR-065

2426-PFR-074

2426-PFR-083

2426-PFR-089

Please call me if you have any questions.

Sincerely,

W. A. Simon
Project Manager

cc: J. Roedel/APS
E. E. Van Brunt/APS
G. L. Wessman/TPT

REVIEW OF CORRECTIVE ACTION PLAN

PFR NO. 2426-012 REVISION A CAP NO. C82-15-D

AFFECTED ITEM: Level transmitters 01-J-CTB-LT-36, 01-J-CTA-LT-35, and other instruments with 1/4" diameter support bolts torqued with the same model torque wrench (1-J-AFB-FT-41A, 1-J-AFB-FT-41B, and 1J-AFA-FT-40A are examples).

REVIEW & COMMENT BY GA INITIATOR:

DOES THE PLAN INDICATE FULL UNDERSTANDING OF THE PROBLEM? YES ☐ NO ☒
 DOES THE PLAN ADDRESS THE PROBLEM IN ENOUGH DETAIL? YES ☐ NO ☒
 DOES THE PLAN INDICATE ACCEPTABLE CORRECTIVE ACTION? YES ☒ NO ☐ See below
 DOES THE PLAN INDICATE CORRECTION OF SIMILAR PROBLEMS? YES ☒ NO ☐

OTHER COMMENTS: Corrective action number 2a implies that only the check for under-torque was performed. While technically this C/A is not complete, it has addressed the most likely "accident" that would result (bolts become loose and sensing lines not secured during seismic). The 1/4" bolts are probably the same material as the 5/16" bolts (A-193, Grade B8 Class 2, yield 80,000), which could accept over 100% over-torque and not yield (A. Chuang evaluations 9/29/82 and 9/30/82). Practically speaking, I doubt any Proto torque wrench routinely calibrated would be that far off (allow over 10-ft-lbs torque when set at 5-ft-lb, and pass calibration at 20 ft-lbs) to over-torque the bolts beyond their yeild point).

REVIEWED BY: W. Funke*William H. Funke*DATE: 10-29-82

REVIEW & COMMENT BY GA TASK LEADER

*Agree with above.*REVIEWED BY: J. BrevianDATE: 10/29/82

COMMENTS BY FINDINGS REVIEW COMMITTEE:

In order to determine that the bolts are not over torqued and have not been damaged they should have been loosened, inspected and then re-torqued.

BY: S. L. KoutzDATE: 10/29/82

COMMENTS BY GA PROJECT MANAGER:

Recommend APS perform spot checks for over-torquing.

BY: [Signature]DATE: 11/8/82



Arizona Public Service Company

P.O. BOX 21566 • PHOENIX, ARIZONA 85033

October 20, 1982

ANPP-22046-JAR

Mr. W. A. Simon
Project Manager
Torrey Pines Technology
10955 John J. Hopkins Drive
San Diego, California 92121

Subject: Potential Finding Reports Classified as "Findings"
File: 82-003-002

Dear Mr. Simon:

We have reviewed the Potential Findings classified as "Findings" and have prepared specific corrective action plans for each item.

Attached for your review are the corrective action plans for Potential Finding Reports (PFR's) No. 011, 012, 013, 025, 037, 039, 040 and 043.

Very truly yours,

Keith
Keith Turley
Chairman of the Board and
Chief Executive Officer

.KT:mft

Attachments

cc: O. M. De Michele
T. G. Woods, Jr.
E. E. Van Brunt, Jr.
G. C. Andognini
J. A. Roedel
W. E. Ide

aps. CORRECTIVE ACTION REPORT

Page 1 of 2

Classification of Adverse Condition: (See Back of Form)		CAR No. C82-17-D pg. 2
<input type="checkbox"/> NONCOMPLIANCE <input checked="" type="checkbox"/> Deviation		
How Discovered: <input type="checkbox"/> Audit No. _____	<input checked="" type="checkbox"/> TORREY PINES AUDIT <input checked="" type="checkbox"/> Other PFR-013	Reportability Evaluation: <input checked="" type="checkbox"/> Not Reportable <input type="checkbox"/> REF No. _____
Organization Responsible: BECHTEL CORP.	Date Discovered: July 28, 1982	Date Reply Due: 9/3/82
Initiator(s): L. Souza	Controlling Document: WPP/QCI 302.0: APPENDIX I "Instrument Installation" Sec. D.1, Task 10.3	Discussed With: D. Hawkinson R. Grant V. Mallen
Requirement: The QCE is to enter on the Construction Inspection Planning (CIP) the - torquing requirement and the serial number and calibration due date of the torque wrench used to verify bolting of concrete anchors and instrument and tubing supports.		
Description of Adverse Condition: Contrary to the above: The required torque wrench information was not recorded on the CIP's dated 4/29/82 for 1-J-HCD-PT-352D & 1-J-HCD-PT-351D. There are no other records of actual torque wrench used.		
Recommended Corrective Action: 1.) Review all "Q" instrument CIP's for Units 1, 2, & 3 for similar situation. 2.) Provide a listing of those found with similar problems. 3.) Reverify torquing to procedural requirements and document. 4.) Train personnel to the importance of properly completed documents.		
Corrective Action - Including Action to Prevent Recurrence: (See Back of Form) See attached page 2 of 2		
Prepared By: <u>R. Grant</u> Authorized By: <u>R. Grant</u> Date: <u>8/11/82</u>		
Corrective Action Evaluation: Comments: Acceptable <input checked="" type="checkbox"/> Not Acceptable _____ Verification Required YES _____ NO _____ The apparent root cause is: Human error; isolated occurrence. Evaluator: <u>L. Souza</u> Date: <u>9-10-82</u>		
Verification: Comments: Acceptable _____ Not Acceptable _____ Evaluator: _____ Date: _____		

Project

PVNGS 10407

Organization

Bechtel

Identify Information

Corrective Action:

1. A review of all CIP's has been conducted in the vault and no additional CIP's reflected this problem.
2. None were found.
3. The (2) two referenced instruments were re-inspected for torque and found acceptable without movement of nuts.
4. Personnel trained and documented on requirements of WPP/QCI 302. "Instrument Installation" on 8-10-82.



TORREY PINES TECHNOLOGY
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P.O. BOX 81608
SAN DIEGO, CALIFORNIA 92138

TPT:191:WAS:82
November 12, 1982

Mr. Keith L. Turley
Chairman and Chief
Executive Officer
Arizona Public Service Company
411 N. Central Avenue
Phoenix, Arizona 85004

Subject: Review of Corrective Action Plans

Dear Mr. Turley:


Enclosed are completed Review of Corrective Action Plans for the following
Potential Finding Reports:

2426-PFR-001
2426-PFR-007
2426-PFR-011
2426-PFR-012
2426-PFR-013
2426-PFR-014
2426-PFR-025
2426-PFR-027
2426-PFR-037

2426-PFR-039
2426-PFR-040
2426-PFR-043
2426-PFR-050
2426-PFR-065
2426-PFR-074
2426-PFR-083
2426-PFR-089

Please call me if you have any questions.

Sincerely,


W. A. Simon
Project Manager

cc: J. Roedel/APS
E. E. Van Brunt/APS
G. L. Wessman/TPT

REVIEW OF CORRECTIVE ACTION PLAN

PFR NO. 2426-013 REVISION A CAP NO. C82-17-D

AFFECTED ITEM:

Pressure Transmitters 1-J-HCD-PT-352D, 1-J-HCD-PT-351D.

REVIEW & COMMENT BY GA INITIATOR:

DOES THE PLAN INDICATE FULL UNDERSTANDING OF THE PROBLEM? YES ☐ NO ☒
 DOES THE PLAN ADDRESS THE PROBLEM IN ENOUGH DETAIL? YES ☐ NO ☒
 DOES THE PLAN INDICATE ACCEPTABLE CORRECTIVE ACTION? YES ☒ NO ☐
 DOES THE PLAN INDICATE CORRECTION OF SIMILAR PROBLEMS? YES ☒ NO ☐

OTHER COMMENTS: As noted in the Review of Corrective Action Plan for PFR-012, the C/A does not address the possibility of the bolts having been over torqued during the original inspection. Because no torque wrench information was recorded, the 1/4" bolts could also have been torqued with an oversized torque wrench (as was done on 47 instruments identified on PFR-012). Practically speaking, however, I would accept this C/A for the same reasons stated in the Review of C/A Plan for PFR-012.

REVIEWED BY: W. FunkeWilliam H. FunkeDATE: 10-29-82

REVIEW & COMMENT BY GA TASK LEADER

Agree with above.REVIEWED BY: J. BrevelDATE: 10-29-82

COMMENTS BY FINDINGS REVIEW COMMITTEE:

In order to determine that the bolts are not over torqued and have not been damaged they should have been loosened, inspected and retorqued.

BY: S. L. KouzDATE: 10/29/82

COMMENTS BY GA PROJECT MANAGER:

Recommend spot checks for overtorquing.

BY: MA SimeDATE: 11/8/82

Arizona Public Service Company

P.O. BOX 21665 • PHOENIX, ARIZONA 85036

October 6, 1982

ANPP-21951-JAR

Mr. W. A. Simon
Project Manager
Torrey Pines Technology
10955 John J. Hopkins Drive
San Diego, California 92121

Subject: Potential Finding Reports Classified as "Findings"

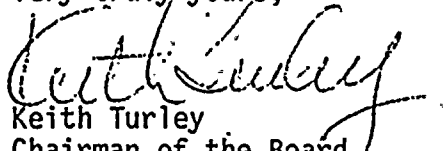
re: TPT:158:WAS:82, dated 9/23/82, Subject: as above

Dear Mr. Simon:

We have reviewed the Potential Findings classified as "Findings" transmitted by the referenced letter and have prepared specific corrective action plans for each item. As a vehicle for preparation of the corrective action plans and disposition of these findings, we have utilized the existing APS Corrective Action Report form and will utilize the existing appropriate QA procedures for tracking and closing the items.

Attached for your review are the corrective action plans for PFR's 001, 007, 014 and 027. If you have any questions regarding these plans, please contact Ed Van Brunt or John Roedel.

Very truly yours,


Keith Turley
Chairman of the Board
and Chief Executive Officer

KT:mft

Attachments

cc: O. M. De Michele w/attach.
T. G. Woods, w/attach.
E. E. Van Brunt, w/attach.
G. C. Andognini, w/attach.
J. A. Roedel, w/attach.



CORRECTIVE ACTION REPORT

Page 1 of 2

Classification of Adverse Condition: (See Back of Form) <input type="checkbox"/> NONCOMPLIANCE <input checked="" type="checkbox"/> Deviation		CAR No. C82-37D
How Discovered: <input type="checkbox"/> Audit No. <input checked="" type="checkbox"/> Other <u>Torrey Pines</u>		Reportability Evaluation: <input checked="" type="checkbox"/> Not Reportable <input type="checkbox"/> REF No. _____
Organization Responsible: Bechtel	Date Discovered: 8/4/82	Date Reply Due: 10/15/82
Initiator(s): Torrey Pines/GA <i>Red</i>	Controlling Document: a) Project Quality Program Manual QP 2.2 Rev. 5 "Training and Education", Section 2.2 b) QCI 8.0 (Rev. 8), Qualification, Certification, and Training of Quality Control (Cont)	Discussed With: _____
Requirement: See attached Torrey Pines PFR-014.		
Description of Adverse Condition: See attached Torrey Pines PFR-014.		
Recommended Corrective Action: 1. Review rework tags to determine extent of problem. 2. Reinspect all installation which may have had additional welding after weld inspection.. 3. Initiate action to prevent recurrence.		
Corrective Action - Including Action to Prevent Recurrence: (See Back of Form) 1. 100% review was made of instrument rework tags. Sixteen were found that could have involved additional welding. 2. Sixteen new CIP's were issued as a result of above review. Inspections were completed and no discrepancies were noted. (Cont.)		
Prepared By: _____	Authorized By: <i>[Signature]</i>	Date: 10/5/82
Corrective Action Evaluation: Comments Acceptable <input checked="" type="checkbox"/> Not Acceptable _____ Verification Required YES <input checked="" type="checkbox"/> NO _____ Cause - see APS letter of October 25, 1982.		
Evaluator: <i>[Signature]</i> Date: 10/5/82		
Verification: Comments Acceptable _____ Not Acceptable _____ Evaluator: _____ Date: _____		



CORRECTIVE ACTION REPORT
(Continuation Sheet)

CAR No. C82-37D. Pg. 3

Page 2 Of 2

ORGANIZATION RESPONSIBLE:

Bechtel

DATE:

8/4/82

REPLY. DUE:

10/15/82

Controlling Document (Cont.):

Personnel, 5.0 and 7.1.

Corrective Action (Cont.):

3. PCN 40 to WPP/QCI 302 was initiated to require welding inspection as last buy off to prevent recurrence.
4. All affected personnel were trained and documentation is on file.

Arizona Public Service Company

P.O. BOX 21666 • PHOENIX, ARIZONA 85036

October 25, 1982
ANPP-22099-JAR

Mr. W. A. Simon
Project Manager
Torrey Pines Technology
10955 John J. Hopkins Drive
San Diego, California 92121

Subject: Potential Findings Reports Classified As "Findings"
File: 82-003-002

Dear Mr. Simon:

The following additional information is submitted in reference to:

2426-PFR-001

A further review of this Finding indicates some misunderstanding regarding how APS handles correspondence regarding licensing changes and design documents. The SAR documents, at this stage in the Project, are controlled by Bechtel PVNGS Engineering in accordance with Bechtel and APS Engineering procedures. The changes to the SAR are initiated by formal letter request from APS or Bechtel initiates SAR changes from the receipt of NRC correspondence that is automatically copied to Bechtel Licensing from the APS Document Distribution Procedures No. NS-1, Revision 5 and NS-9, Revision 6. Changes, if required, are then initiated and processed in accordance with APS and Bechtel procedures. The Bechtel procedures require a review of the SAR change to determine what other design documents will be affected by the SAR change. This activity is a line item on the Bechtel SAR Design Change Checklist.

2426-PFR-007

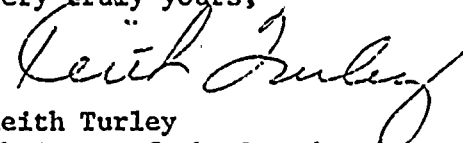
The apparent root cause of this Finding was that personnel were transferred out of existing QA/QC organizations to the new Start-Up QA/QC Unit that was organized in June, 1982. Consequently, the authorized positions were not filled.

Mr. W. A. Simon
Project Manager
Torrey Pines Technology
ANPP-22099-JAR
October 25, 1982
Page 2

2426-PFR-014 and 2426-PFR-017

The apparent root cause of this Deficiency is that the existing procedures were inadequate in that they did not cover the inspection of rework in the proper sequence.

Very truly yours,



Keith Turley
Chairman of the Board and
Chief Executive Officer

KT:skc

cc: O. M. DeMichele
T. G. Woods, Jr.
E. E. Van Brunt, Jr.
G. C. Andognini
J. A. Roedel
W. E. Ide



TORREY PINES TECHNOLOGY
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A DIVISION OF GA Technologies Inc.
P.O. BOX 81608
SAN DIEGO, CALIFORNIA 92138

TPT:191:WAS:82
November 12, 1982

Mr. Keith L. Turley
Chairman and Chief
Executive Officer
Arizona Public Service Company
411 N. Central Avenue
Phoenix, Arizona 85004

Subject: Review of Corrective Action Plans

Dear Mr. Turley:

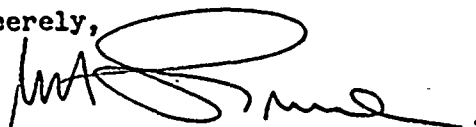
Enclosed are completed Review of Corrective Action Plans for the following
Potential Finding Reports:

2426-PFR-001
2426-PFR-007
2426-PFR-011
2426-PFR-012
2426-PFR-013
2426-PFR-014
2426-PFR-025
2426-PFR-027
2426-PFR-037

2426-PFR-039
2426-PFR-040
2426-PFR-043
2426-PFR-050
2426-PFR-065
2426-PFR-074
2426-PFR-083
2426-PFR-089

Please call me if you have any questions.

Sincerely,


W. A. Simon
Project Manager

cc: J. Roedel/APS
E. E. Van Brunt/APS
G. L. Wessman/TPT

REVIEW OF CORRECTIVE ACTION PLAN

PFR NO. 2426-014 REVISION Issue A CAP NO. C82-37D

AFFECTED ITEM: 1. Flow transmitter 1-J-AFB-FT-41B;
2. Level transmitters 01-J-CTB-LT-36 and 01-J-CTA-LT-35;
3. Pressure transmitters 01-J-HCA-PT-351A and 1-J-HCA-PT-352A.

REVIEW & COMMENT BY GA INITIATOR:

DOES THE PLAN INDICATE FULL UNDERSTANDING OF THE PROBLEM?	YES <input checked="" type="checkbox"/>	NO <input type="checkbox"/>
DOES THE PLAN ADDRESS THE PROBLEM IN ENOUGH DETAIL?	YES <input checked="" type="checkbox"/>	NO <input type="checkbox"/>
DOES THE PLAN INDICATE ACCEPTABLE CORRECTIVE ACTION?	YES <input checked="" type="checkbox"/>	NO <input type="checkbox"/>
DOES THE PLAN INDICATE CORRECTION OF SIMILAR PROBLEMS?	YES <input checked="" type="checkbox"/>	NO <input type="checkbox"/>

OTHER COMMENTS:

There is no specific mention of training the individuals involved (#183 and #169), but this was done by Bechtel QC Supervision when the discrepancy was identified. Also, reviewing Rework Tags is the acceptable method for purging the system of similar discrepancies.

REVIEWED BY: William H. Finkle DATE: 10-11-82

REVIEW & COMMENT BY GA TASK LEADER

None

REVIEWED BY: J. Burd DATE: 10-11-82

COMMENTS BY FINDINGS REVIEW COMMITTEE:

The CAP is acceptable except that the cause appears to be a procedural violation in addition to an inadequate procedure.

BY: S. L. Kouh DATE: 10/29/82

COMMENTS BY GA PROJECT MANAGER:

Acceptable.

BY: [Signature] DATE: 11/8/82



Arizona Public Service Company
P.O. BOX 21656 • PHOENIX, ARIZONA 85036

October 20, 1982
ANPP-22046-JAR

Mr. W. A. Simon
Project Manager
Torrey Pines Technology
10955 John J. Hopkins Drive
San Diego, California 92121

Subject: Potential Finding Reports Classified as "Findings"
File: 82-003-002

Dear Mr. Simon:

We have reviewed the Potential Findings classified as "Findings" and have prepared specific corrective action plans for each item.

Attached for your review are the corrective action plans for Potential Finding Reports (PFR's) No. 011, 012, 013, 025, 037, 039, 040 and 043.

Very truly yours,


Keith Turley
Chairman of the Board and
Chief Executive Officer

.KT:mft

Attachments

cc: O. M. De Michele
T. G. Woods, Jr.
E. E. Van Brunt, Jr.
G. C. Andognini
J. A. Roedel
W. E. Ide



CORRECTIVE ACTION REPORT

Page 1 of X2

Classification of Adverse Condition: (See Back of Form)

☐ NONCOMPLIANCE☒ DeviationCAR No. C82-16-D pg. 2

How Discovered:

☐ Audit No. _____☒ TORREY PINES AUDIT☒ Other PER 425

Reportability Evaluation:

☒ Not Reportable ☐ REF No. _____

Organization Responsible:

BECHTEL CORP.

Date Discovered:

August 3, 1982

Date Reply Due:

9/3/82

Initiator(s):

L. Souza
L. Souza

Controlling Document:

WPP/QCI 302 "Instrument Installation"
Section 4.3

Discussed With:

D. Hawkinson
R. Grant
V. Mallen

Requirement: Quality Class "Q" instruments shall be installed per requirements listed below...3/4" dia bolts Min.135 FT.lbs. Max.150 FT.lbs.

NOTE: In the event vendor instructions specify different installation requirements, the vendor's instructions shall take precedence.

Description of Adverse Condition:

Contrary to the above:

The 3/4" dia bolts on 1-J-DGB-PY-01,02,08 were torqued to 125 FT.lbs., rather than the required 135-150 FT.lbs. as documented on the applicable CIP's dated 2/10/82 and 5/6/82.

Recommended Corrective Action:

- 1.) Review Unit 1,2,& 3 CIP's to determine if a similar situation exist on other installation.
- 2.) Provide a listing of those with similar problems.
- 3.) Retorque to required levels and document.
- 4.) Instruct personnel to procedural requirements.

Corrective Action - Including Action to Prevent Recurrence: (See Back of Form)

See attached page 2 of 2

Prepared By: [Signature]Authorized By: [Signature]Date: 10/11/82

Corrective Action Evaluation:

Comments

Acceptable ☒Not Acceptable ☐Verification Required YES ☒NO ☐

The apparent root cause is: Human error.

Evaluator: [Signature]Date: 9-10-82

Verification:

Comments

Acceptable ☐Not Acceptable ☐

Evaluator: _____

Date: _____

QAF-4A (Rev.C)

Project	Organization
PVNGS 10407	Bechtel

Identify Information

Corrective Action:

1. All CIP's in vault were reviewed, 8 CIP's reflected same condition.
2. 01-J-DGB-PY-08, 06, 04, 02
01-J-DGA-PY-07, 05, 03, 01
01-J-DGB-BO4
01-J-DBA-BO4
3. The above installations were re-inspected, found acceptable with no bolt movement, & properly documented in Q.C. Vault.
4. Personnel were instructed on total WPP/QCI 302.0 "Instrument Installation", including section 4.3 & documented 8-10-82.

Note: During original inspections for the above, the Inspector inadvertently used the torque requirements specified for concrete expansion anchors (WPP/QCI 124.1).



TORREY PINES TECHNOLOGY
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A DIVISION OF GA Technologies Inc.
P.O. BOX 81608
SAN DIEGO, CALIFORNIA 92138

TPT:191:WAS:82
November 12, 1982

Mr. Keith L. Turley
Chairman and Chief
Executive Officer
Arizona Public Service Company
411 N. Central Avenue
Phoenix, Arizona 85004

Subject: Review of Corrective Action Plans

Dear Mr. Turley:


Enclosed are completed Review of Corrective Action Plans for the following
Potential Finding Reports:

2426-PFR-001
2426-PFR-007
2426-PFR-011
2426-PFR-012
2426-PFR-013
2426-PFR-014
2426-PFR-025
2426-PFR-027
2426-PFR-037

2426-PFR-039
2426-PFR-040
2426-PFR-043
2426-PFR-050
2426-PFR-065
2426-PFR-074
2426-PFR-083
2426-PFR-089

Please call me if you have any questions.

Sincerely,


W. A. Simon
Project Manager

cc: J. Roedel/APS
E. E. Van Brunt/APS
G. L. Wessman/TPT

REVIEW OF CORRECTIVE ACTION PLAN

PFR NO. 2426-025 REVISION A CAP NO. C82-16-D

AFFECTED ITEM:

Pressure Relays, 01-J-DGA/B-PY-01, -02, to -08 (8 instruments total)..

REVIEW & COMMENT BY GA INITIATOR:

DOES THE PLAN INDICATE FULL UNDERSTANDING OF THE PROBLEM?	YES <input checked="" type="checkbox"/>	NO <input type="checkbox"/>
DOES THE PLAN ADDRESS THE PROBLEM IN ENOUGH DETAIL?	YES <input checked="" type="checkbox"/>	NO <input type="checkbox"/>
DOES THE PLAN INDICATE ACCEPTABLE CORRECTIVE ACTION?	YES <input checked="" type="checkbox"/>	NO <input type="checkbox"/>
DOES THE PLAN INDICATE CORRECTION OF SIMILAR PROBLEMS?	YES <input checked="" type="checkbox"/>	NO <input type="checkbox"/>

OTHER COMMENTS:

The corrective action is acceptable, although from the listing of applicable CIPs given, it appears that 10 (rather than the stated 8) CIPs reflected the same condition.

REVIEWED BY: William H. Funke DATE: 11-1-82

REVIEW & COMMENT BY GA TASK LEADER

Agree with above.

REVIEWED BY: J. Burrie DATE: 11-1-82

COMMENTS BY FINDINGS REVIEW COMMITTEE:

CAP is acceptable

BY: S. A. Kouty DATE: 11/3/82

COMMENTS BY GA PROJECT MANAGER:

Acceptable

BY: MA Sma DATE: 11/8/82

Arizona Public Service Company

P.O. BOX 21666 • PHOENIX, ARIZONA 85036

October 6, 1982

ANPP-21951-JAR

Mr. W. A. Simon
Project Manager
Torrey Pines Technology
10955 John J. Hopkins Drive
San Diego, California 92121

Subject: Potential Finding Reports Classified as "Findings"

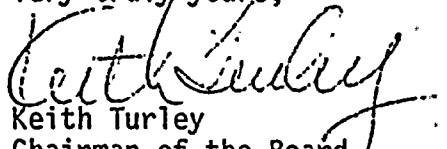
re: TPT:158:WAS:82, dated 9/23/82, Subject: as above

Dear Mr. Simon:

We have reviewed the Potential Findings classified as "Findings" transmitted by the referenced letter and have prepared specific corrective action plans for each item. As a vehicle for preparation of the corrective action plans and disposition of these findings, we have utilized the existing APS Corrective Action Report form and will utilize the existing appropriate QA procedures for tracking and closing the items.

Attached for your review are the corrective action plans for PFR's 001, 007, 014 and 027. If you have any questions regarding these plans, please contact Ed Van Brunt or John Roedel.

Very truly yours,


Keith Turley
Chairman of the Board
and Chief Executive Officer

KT:mft

Attachments

cc: O. M. De Michele w/attach.
T. G. Woods, w/attach.
E. E. Van Brunt, w/attach.
G. C. Andognini, w/attach.
J. A. Roedel, w/attach.



CORRECTIVE ACTION REPORT

Page 1 of 2

Classification of Adverse Condition: (See Back of Form) <input type="checkbox"/> NONCOMPLIANCE <input checked="" type="checkbox"/> Deviation		CAR No. C82-38D
How Discovered: <input type="checkbox"/> Audit No. <input checked="" type="checkbox"/> Other Torrey Pines		Reportability Evaluation: <input checked="" type="checkbox"/> Not Reportable <input type="checkbox"/> REF No. _____
Organization Responsible: Bechtel	Date Discovered: 8/5/82	Date Reply Due: 10/15/82
Initiator(s): Torrey Pines/GA <i>Rad</i>	Controlling Document: 1) APS QA Manual QAD 10.0 Rev. 2, "Inspection" Sec. 5.1, page 5 2) BPC Project Quality Program Manual, QP 10.1 Rev. 3 "Site Inspection, Sec. 4.1.2"	Discussed With:
Requirement: See Torrey Pines PFR 27 - (Attached)		
Description of Adverse Condition: See Torrey Pines PFR 27 - (Attached)		
Recommended Corrective Action: 1. Sample 10% of CIP's to determine extent of problem. If deficiencies are encountered, coordinate with APS QA to determine additional action to be taken. 2. Document and repair installation found to be deficient. 3. To prevent recurrence, change procedure to require welding inspection after configuration check and final acceptance. 4. Document training of all personnel to procedural requirements.		
Corrective Action - Including Action to Prevent Recurrence: (See Back of Form) 1. Investigation revealed 114 total instrument CIP's exist with welding. Eleven were re-inspected and welds were found to be acceptable, therefore no further rework or inspection is required. 2. PCN 40 was issued to WPP/QCI 302 requiring welding QC as last acceptance inspection to prevent recurrence. (Cont.)		
Prepared By: _____	Authorized By: <i>P. J. Vent</i>	Date: 9/5/82
Corrective Action Evaluation: Comments Acceptable <input checked="" type="checkbox"/> Not Acceptable _____ Verification Required YES <input checked="" type="checkbox"/> NO _____ Root cause - see APS letter of Oct. 25, 1982. Evaluator: <i>A. Souza</i> Date: 10/5/82		
Verification: Comments Acceptable _____ Not Acceptable _____ Evaluator: _____ Date: _____		



CORRECTIVE ACTION REPORT
(Continuation Sheet)

CAR No. C82-38D pg. 3

Page 2 Of 2

ORGANIZATION RESPONSIBLE:

Bechtel

DATE:

8/5/82

REPLY DUE:

10/15/82

Corrective Action (Cont.):

3. Personnel were trained to procedure requirements and documentation is on file.

Arizona Public Service Company

P.O. BOX 21655 • PHOENIX, ARIZONA 85035

CAP 082-382D

Pg. 4

October 25, 1982
ANPP-22099-JAR

Mr. W. A. Simon
Project Manager
Torrey Pines Technology
10955 John J. Hopkins Drive
San Diego, California 92121

Subject: Potential Findings Reports Classified As "Findings"
File: 82-003-002

Dear Mr. Simon:

The following additional information is submitted in reference to:

2426-PFR-001

A further review of this Finding indicates some misunderstanding regarding how APS handles correspondence regarding licensing changes and design documents. The SAR documents, at this stage in the Project, are controlled by Bechtel PVNGS Engineering in accordance with Bechtel and APS Engineering procedures. The changes to the SAR are initiated by formal letter request from APS or Bechtel initiates SAR changes from the receipt of NRC correspondence that is automatically copied to Bechtel Licensing from the APS Document Distribution Procedures No. NS-1, Revision 5 and NS-9, Revision 6. Changes, if required, are then initiated and processed in accordance with APS and Bechtel procedures. The Bechtel procedures require a review of the SAR change to determine what other design documents will be affected by the SAR change. This activity is a line item on the Bechtel SAR Design Change Checklist.

2426-PFR-007

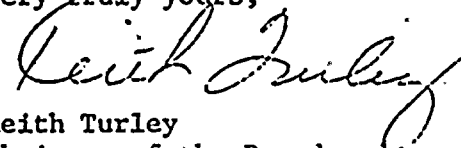
The apparent root cause of this Finding was that personnel were transferred out of existing QA/QC organizations to the new Start-Up QA/QC Unit that was organized in June, 1982. Consequently, the authorized positions were not filled.

Mr. W. A. Simon
Project Manager
Torrey Pines Technology
ANPP-22099-JAR
October 25, 1982
Page 2

2426-PFR-014 and 2426-PFR-027

The apparent root cause of this Deficiency is that the existing procedures were inadequate in that they did not cover the inspection of rework in the proper sequence.

Very truly yours,


Keith Turley
Chairman of the Board and
Chief Executive Officer

KT:skc

cc: O. M. DeMichele
T. G. Woods, Jr.
E. E. Van Brunt, Jr.
G. C. Andognini
J. A. Roedel
W. E. Ide



TORREY PINES TECHNOLOGY
P.O. Box 81608
San Diego, California 92138
Telephone: (714) 455-2654

A DIVISION OF GA Technologies Inc.
P.O. BOX 81608
SAN DIEGO, CALIFORNIA 92138

TPT:191:WAS:82
November 12, 1982

Mr. Keith L. Turley
Chairman and Chief
Executive Officer
Arizona Public Service Company
411 N. Central Avenue
Phoenix, Arizona 85004

Subject: Review of Corrective Action Plans

Dear Mr. Turley:

Enclosed are completed Review of Corrective Action Plans for the following
Potential Finding Reports:

2426-PFR-001	2426-PFR-039
2426-PFR-007	2426-PFR-040
2426-PFR-011	2426-PFR-043
2426-PFR-012	2426-PFR-050
2426-PFR-013	2426-PFR-065
2426-PFR-014	2426-PFR-074
2426-PFR-025	2426-PFR-083
<u>2426-PFR-027</u>	2426-PFR-089
2426-PFR-037	

Please call me if you have any questions.

Sincerely,

W. A. Simon
Project Manager

cc: J. Roedel/APS
E. E. Van Brunt/APS
G. L. Wessman/TPT

REVIEW OF CORRECTIVE ACTION PLAN

PFR NO. 2426-027 REVISION A CAP NO. C82-38D

AFFECTED ITEM: All welds (used for structural mounting of instrumentation panels and tubing supports) for all Q-Class, Seismic Category I instruments inspected per WPP/QCI 302.0, "Instrumentation Installation."

REVIEW & COMMENT BY GA INITIATOR:

DOES THE PLAN INDICATE FULL UNDERSTANDING OF THE PROBLEM?	YES <input type="checkbox"/>	NO <input checked="" type="checkbox"/>	} Note 1
DOES THE PLAN ADDRESS THE PROBLEM IN ENOUGH DETAIL?	YES <input type="checkbox"/>	NO <input checked="" type="checkbox"/>	
DOES THE PLAN INDICATE ACCEPTABLE CORRECTIVE ACTION?	YES <input type="checkbox"/>	NO <input checked="" type="checkbox"/>	
DOES THE PLAN INDICATE CORRECTION OF SIMILAR PROBLEMS?	YES <input checked="" type="checkbox"/>	NO <input type="checkbox"/>	Note 2

OTHER COMMENTS:

Note 1: WPP/QCI 302.0 does not address "sampling"; rather, it implies mandatory QCE inspection of all Q-Class, Seismic Category I welds. The essential problem in PFR-027 is that some welds had not been WQCE inspected because of a loophole in the procedure, and that this loophole could apply to all the welds inspected by WPP/QCI 302.0. The fact that 11 instrument installations were reinspected and found free of weld defects does not satisfy the basic requirement that all welds be inspected and documented per WPP/QCI 302.0. The only corrective action to satisfy that requirement would be to reinspect the welds for all 114 installations.

If "sampling" were allowed, a "sample 10%" approach is not always effective in limiting
(Continued on page 2)

REVIEWED BY: William H. Funke W. Funke DATE: 10-29-82

REVIEW & COMMENT BY GA TASK LEADER

Agree with above. 10% sampling has no statistical significance

REVIEWED BY: S. Burrell DATE: 10-29-82

COMMENTS BY FINDINGS REVIEW COMMITTEE:

The corrective action to prevent recurrence of the problem is acceptable. However, the possibility still exists that there are many uninspected welds on instrument installations.

BY: S. L. Kouch DATE: 10/29/82

COMMENTS BY GA PROJECT MANAGER:

Recommend to reinspect all 114 installations.

BY: MA Sime DATE: 11-8-82

Review of Corrective Action Plan (Con't)
PFR NO. 2426-027
Rev. A
CAP NO. C82-38D

the Consumer's Risk, i.e., protecting the customer (APS) from "accepting" installations with some weld defects based upon a small sample found to be free of defects. For example, if a welder made defective welds on one instrument installation out of 20, there would be approximately six defective installations out of the 114 total. With a sample size of 11 installations, there is only a 43% probability of picking one of the six defective ones as part of the sample (assuming no bias on the part of Bechtel in selecting the sample). A larger sample size is needed to have greater assurance of finding any defective installations. In the above example, it would take a sample size of 46 to have a 90% probability of finding one of the six defective installations.

Note 2: Corrective actions #2 and #3 are adequate to identify the cause and prevent recurrence of the problem.

Arizona Public Service Company
P.O. BOX 21666 • PHOENIX, ARIZONA 85036

October 20, 1982
ANPP-22046-JAR

Mr. W. A. Simon
Project Manager
Torrey Pines Technology
10955 John J. Hopkins Drive
San Diego, California 92121

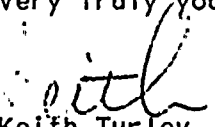
Subject: Potential Finding Reports Classified as "Findings"
File: 82-003-002

Dear Mr. Simon:

We have reviewed the Potential Findings classified as "Findings" and have prepared specific corrective action plans for each item.

Attached for your review are the corrective action plans for Potential Finding Reports (PFR's) No. 011, 012, 013, 025, 037, 039, 040 and 043.

Very truly yours,


Keith Turley
Chairman of the Board and
Chief Executive Officer

KT:mft

Attachments

cc: O. M. De Michele
T. G. Woods, Jr.
E. E. Van Brunt, Jr.
G. C. Andognini
J. A. Roedel
W. E. Ide



CORRECTIVE ACTION REPORT

Page 1 of 1

Classification of Adverse Condition: (See Back of Form) <input type="checkbox"/> NONCOMPLIANCE <input checked="" type="checkbox"/> Deviation		CAR No. C82-41D
How Discovered: <input type="checkbox"/> Audit No. <input checked="" type="checkbox"/> Other <u>Torrey Pines</u> <u>PFR-037</u>		Reportability Evaluation: <input checked="" type="checkbox"/> Not Reportable <input type="checkbox"/> REF No.
Organization Responsible: Bechtel	Date Discovered: 8/23/82	Date Reply Due: 11/12/82
Initiator(s): TPT/GA	Controlling Document: WPP/QCI 255.0 WPP/QCI 2.2	Discussed With: V. Mallen M. Rosen
Requirement: See Torrey Pines PFR-037.		
Description of Adverse Condition: See Torrey Pines PFR-037.		
Recommended Corrective Action: 1. Review a sample of Unit 1 and 2 TIR's to determine if similar situations exist. 2. Document any discrepancies noted and evaluate their significance. 3. Make any corrections necessary. 4. Instruct personnel to procedural requirements. 5. Determine the cause of these discrepancies.		
Corrective Action - Including Action to Prevent Recurrence: (See Back of Form) See APS letter of Nov. 2, 1982.		
Prepared By: _____ Authorized By: _____ Date: _____		
Corrective Action Evaluation: Comments _____ Acceptable _____ Not Acceptable _____ Verification Required YES _____ NO _____ The apparent root cause is: Inattention to detail and inadequate review prior to filing. Evaluator: _____ Date: _____		
Verification: Comments _____ Acceptable _____ Not Acceptable _____ Evaluator: _____ Date: _____		

Arizona Public Service Company

P.O. BOX 21666 • PHOENIX, ARIZONA 85036

November 2, 1982

ANPP-22176-JAR/TGWJr

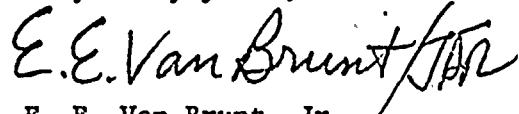
Mr. W. A. Simon
Project Manager
Torrey Pines Technology
19055 John J. Hopkins Drive
San Diego, California 92121

Subject: Corrective Action for PFR's 037, 050, 065, 083 and 089
File: 82-003-002

Dear Mr. Simon:

The recommended corrective action as stated on the Corrective Action Reports concerning the subject preliminary finding reports is the corrective action that will be implemented.

Very truly yours,



E. E. Van Brunt, Jr.
APS Vice President
Nuclear Projects
ANPP Project Director

EEVBJr/JAR:skc

cc: O. M. DeMichele
T. G. Woods, Jr.
G. C. Andognini
J. A. Roedel
W. E. Ide



TORREY PINES TECHNOLOGY
P.O. Box 81608
San Diego, California 92138
Telephone: (714) 455-2654

A DIVISION OF GA Technologies Inc.
P.O. BOX 81608
SAN DIEGO, CALIFORNIA 92138

TPT:191:WAS:82
November 12, 1982

Mr. Keith L. Turley
Chairman and Chief
Executive Officer
Arizona Public Service Company
411 N. Central Avenue
Phoenix, Arizona 85004

Subject: Review of Corrective Action Plans

Dear Mr. Turley:


Enclosed are completed Review of Corrective Action Plans for the following
Potential Finding Reports:

2426-PFR-001
2426-PFR-007
2426-PFR-011
2426-PFR-012
2426-PFR-013
2426-PFR-014
2426-PFR-025
2426-PFR-027
2426-PFR-037

2426-PFR-039
2426-PFR-040
2426-PFR-043
2426-PFR-050
2426-PFR-065
2426-PFR-074
2426-PFR-083
2426-PFR-089

Please call me if you have any questions.

Sincerely,


W. A. Simon
Project Manager

cc: J. Roedel/APS
E. E. Van Brunt/APS
G. L. Wessman/TPT

REVIEW OF CORRECTIVE ACTION PLAN

PFR NO. 2426-037 REVISION A CAP NO. C82-41-D

AFFECTED ITEM: Bechtel
 Electrical cables 1ESI03BC1RE, 1EPB04BC1RF, and 1ESP01BC1RC within
 Main Frame 1EPBBS04MF.

REVIEW & COMMENT BY GA INITIATOR:

DOES THE PLAN INDICATE FULL UNDERSTANDING OF THE PROBLEM? YES ☒ NO ☐
 DOES THE PLAN ADDRESS THE PROBLEM IN ENOUGH DETAIL? YES ☒ NO ☐
 DOES THE PLAN INDICATE ACCEPTABLE CORRECTIVE ACTION? YES ☒ NO ☐
 DOES THE PLAN INDICATE CORRECTION OF SIMILAR PROBLEMS? YES ☒ NO ☐

OTHER COMMENTS:

The plan for corrective action appears to be adequate, and the
 cause is correct.

REVIEWED BY: W. FunkeWilliam H. FunkeDATE: 11-1-82

REVIEW & COMMENT BY GA TASK LEADER

Agree with above. Based on the 11/4/82 letter from E.E.
 Von Brunt, the "recommended" corrective action is considered to
 be the action that will be taken by Bechtel, and this review is
 based on the assumption that Bechtel will take those actions.

REVIEWED BY: J. BremerDATE: 11-3-82

COMMENTS BY FINDINGS REVIEW COMMITTEE:

CAP is acceptable providing the sample size is adequate and
 a satisfactory criterion for expanding the sample size is established.

BY: S. L. KoutzDATE: 11/3/82

COMMENTS BY GA PROJECT MANAGER:

CAP is acceptable.

BY: MA. PrinceDATE: 11/8/82



CAP P-82-3-D
pg. 1

Arizona Public Service Company

P.O. BOX 21666 • PHOENIX, ARIZONA 85036

October 20, 1982

ANPP-22046-JAR

Mr. W. A. Simon
Project Manager
Torrey Pines Technology
10955 John J. Hopkins Drive
San Diego, California 92121

Subject: Potential Finding Reports Classified as "Findings"
File: 82-003-002

Dear Mr. Simon:

We have reviewed the Potential Findings classified as "Findings" and have prepared specific corrective action plans for each item.

Attached for your review are the corrective action plans for Potential Finding Reports (PFR's) No. 011, 012, 013, 025, 037, 039, 040 and 043.

Very truly yours,


Keith Turley
Chairman of the Board and
Chief Executive Officer

KT:mft

Attachments

cc: O. M. De Michele
T. G. Woods, Jr.
E. E. Van Brunt, Jr.
G. C. Andognini
J. A. Roedel
W. E. Ide



CORRECTIVE ACTION REPORT

Page 1 of 2

Classification of Adverse Condition: (See Back of Form) <input type="checkbox"/> NONCOMPLIANCE <input checked="" type="checkbox"/> Deviation		CAR No. P-82-3-D
How Discovered: <input type="checkbox"/> Audit No. <input checked="" type="checkbox"/> Other PFR-039	Reportability Evaluation: <input type="checkbox"/> Not Reportable <input checked="" type="checkbox"/> REF No. DER No. 82-56	
Organization Responsible: Quality Systems and Programs	Date Discovered: September 23, 1982	Date Reply Due: N/A
Initiator(s): TPT/GA	Controlling Document: N/A	Discussed With: N/A
Requirement: N/A		
Description of Adverse Condition: Reference TPT Finding 2426-PFR-040/A. Reference TPT Finding 2426-PFR-039/A.		
Recommended Corrective Action: Initiate a Deficiency Evaluation Report (DER) to evaluate this Finding.		
Corrective Action - Including Action to Prevent Recurrence: (See Back of Form) See Page 2.		
Prepared By: J. A. Roedel	Authorized By: J. A. Roedel	Date: 10/7/82
Corrective Action Evaluation: Comments Acceptable Not Acceptable Verification Required YES NO Cause - see APS letter of Nov. 3, 1982. Evaluator: Date:		
Verification: Comments Acceptable Not Acceptable Evaluator: Date:		



CORRECTIVE ACTION REPORT
CONTINUATION SHEET

CAR No. P-82-3-D . pg. 3

Page 2 of 2

Organization Responsible: Quality Systems and Programs	Date Discovered: September 23, 1982	Date Reply Due: N/A
---	--	------------------------

Corrective Action-Including Action to Prevent Recurrence:

A. A Deficiency Evaluation Report (DER) No. 82-56 has been initiated. The evaluation process will include (1) an evaluation of the Deficiency to determine reportability in accordance with 10CFR50.55(e), (2) review detail drawings to determine conformance to design criteria, (3) perform an analysis to assure that the as-built condition will meet design criteria, and (4) initiate corrective action, if required. These activities will be tracked by the DER process.

B. These corrective actions will address the root cause of this Deficiency. Apparently, the designer scaled down the design of the refueling water tank to arrive at the design of the condensate storage tank which was not appropriate.

CAP 882-3-D
Pg. 4

Arizona Public Service Company

P.O. BOX 21666 • PHOENIX, ARIZONA 85036

November 3, 1982

ANPP-22189-JAR/TGWJr

Mr. W. A. Simon
Project Manager
Torrey Pines Technology
19055 John J. Hopkins Drive
San Diego, California 92121

Subject: Potential Findings Reports No. 039, 040 and 074
File: 82-003-002

Dear Mr. Simon:

The apparent root causes of the subject deficiencies are as follows:

PFR No. 039

The condensate storage tank (CST) design was based upon the refueling water tank (RWT) calculations, but the aspect ratio (diameter-to-height ratio) and sure charge (depth of burial) differences were non-conservative requiring a separate calculation for the CST. Also, any changes to the RWT calculation must also be considered in the CST analysis.

PFR No. 040

The smaller liner plate size in the condensate storage tank (CST) roof was used for the design calculation. In addition, preliminary process operating pressures were used as the structural design criteria.

PFR No. 074

The Type 23 cable tray support wall connection design details were believed to be adequate. However, TPT's evaluation determined that this design may not be adequate.

Also enclosed, are (1) a corrective action plan documented on Corrective Action Request 82-19S; (2) project evaluation of Deficiency Evaluation Report (DER) No. 82-56; and (3) Deficiency Evaluation Report (DER) No. 82-63, all which document corrective actions for PFR No. 039 and PFR No. 040.

Very truly yours,

Keith Turley
Chairman of the Board and
Chief Executive Officer

KLT:skc

Enclosures

cc: O. M. DeMichele
T. G. Woods, Jr.
E. E. Van Brunt, Jr.
G. D. Andognini
J. A. Roedel
W. E. Ide

LOS ANGELES
POWER DIVISION

DEFICIENCY EVALUATION REPORT

10 CFR 50.55(e)

AND/OR

10 CFR PART 21

1. REPORT NO. 82-63

REV. NO. 0

DATE 10/11/82

PAGE 1 OF 1

2. PROJECT - NAME/JOB NUMBER

PVNGS - 10407

3. UNIT

1,2,3

4. Q CLASS

Q

5. REFERENCE DOCUMENTS

Calculation 13-CC-CT-015

6. SEISMIC CATEGORY

I -

7. HOW DISCOVERED

Review of the Refueling Water Tank calculations (see DER 82-56).

8. REQUIREMENT

The Refueling Water Tank (RWT) and the Condensate Storage Tank (CST) are required to be designed to resist stresses resulting from operating and extreme environmental/accident forces.

9. DESCRIPTION OF CONDITION

During a review of the RWT calculation package an error was discovered in the determination of the tank wall moment at the junction of the basemat. The correction of this error in the calculation without a more detailed analysis will result in stresses in the inside face vertical rebar of the tank wall that exceed the Design Criteria allowable values due to seismic forces. Since the design of the CWT was based on the analysis and design of the RWT, this error could also impact the CWT.

10. REPORT INITIATOR

K. M. Schechter

12. QA DELIVERY OF DER TO:

W. H. Bingham

10/11/82

3:07 PM

11. QA VALIDATION OF BLOCKS 1-10

R. W. Bingham

10/11/82 3:35 PM

W. H. Bingham

10/11/82

3:15 PM

D. T. Krishna

10/11/82

3:35 PM

13. PRELIMINARY EVALUATION

POTENTIALLY
REPORTABLEYES ☐NO ☐

PROJ ENG/DATE

PROJ MGR/DATE

DATE CLIENT NOTIFIED

14. FINAL EVALUATION

REPORTABLE

YES ☐

10CFR 50.55 (e)

NO ☐

REPORTABLE

YES ☐

10CFR 21

NO ☐

10CFR 21

REPORT BY

PROJ ENG/DATE

PROJ MGR/DATE

QA CONCURRENCE

DATE

15. VERIFICATION OF CORRECTIVE ACTION

TRANSFERRED TO
NCR/CAR☐ ACCEPTED☐ NO

QA


DATE


16. DISTRIBUTION LIST


☒ PROJ. MGR.☒ PROJ. ENGR.☒ EVALUATION COMMITTEE

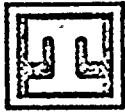
OTHERS

☒ SITE CONST. MGR.☒ PROJECT QE☒ CLIENT☐ PROJ. DOC. CENTER☒ QA SUPERVISOR☐ PROJ. PROC. MGR.☒ MGR. OF QA

 LOS ANGELES POWER DIVISION	PALO VERDE NUCLEAR GENERATING STATION PROJECT EVALUATION - DEFICIENCY EVALUATION REPORT JOB NO. 10407		REPORT NO. 82-63	
			REV. DATE 0 11/5/82	
NAME <u>R. Schechter</u>		G. CLASS <u>Q</u>	UNIT <u>1,2,3</u>	PAGE <u>1</u> OF <u>1</u>
DATE <u>11/8/82</u>		REFERENCE DOCUMENTS Calculation 13-CG-CT-015		
PART 21 REPORTABILITY: IF THE ANSWER TO ANY OF THESE CRITERIA (SEE POPM 16.2 FOR DEFINITIONS) ARE NO THEN THE CONDITION IS NOT REPORTABLE UNDER PART 21.				
1. DOES THE DEFECT EXIST IN A BASIC COMPONENT? <input type="checkbox"/> YES <input type="checkbox"/> NO				
2. DOES THE DEFECT PRESENT A SUBSTANTIAL SAFETY HAZARD? <input type="checkbox"/> YES <input type="checkbox"/> NO				
3. HAS THE COMPONENT BEEN DELIVERED OR OFFERED FOR ACCEPTANCE? <input type="checkbox"/> YES <input type="checkbox"/> NO				
PROJECT EVALUATION <input checked="" type="checkbox"/> INTERIM REPORT <input type="checkbox"/> 30:35(B) FINAL REPORT <input type="checkbox"/> PART 21 REPORT				
I. <u>POTENTIAL PROBLEM</u> The RWT is designed to resist stresses resulting from operating and extreme environmental/accident seismic forces. During a review of the RWT calculation package an error was found in the determination of the tank wall moment at the junction of the basemat. The correction of this error in the calculation without a more detailed analysis would result in stresses in the inside face vertical rebar of the tank wall that exceed the Design Criteria allowable values due to seismic. Since the design of the CWT was based on the analysis and design of the RWT, this error could also impact the CST.				
II. <u>PROBLEM RESOLUTION PLAN</u> Bechtel Engineering is currently performing independent detailed analysis of both the CST and RWT design.				
III. <u>STATUS OF CORRECTIVE ACTION</u> The completed evaluation and final report are forecast to be completed by 1-14-83.				
IDENTIFY CALCULATION OR OTHER DESIGN DOCUMENT WHICH WILL BE INITIATED OR REVISED TO SUPPORT THIS EVALUATION. <u>N/A</u>			SAR IMPACT <input type="checkbox"/> YES <input checked="" type="checkbox"/> NO <u>D. Keith</u> <u>11/8/82</u> NGS DATE	
DOCUMENT TITLE NUMBER AND REVISION AND FORECAST COMPLETION DATE <u>D. Keith</u> <u>11/8/82</u> DATE				
PER EVALUATION AND REPORTABILITY RECOMMENDATION <input type="checkbox"/> REPORTABLE <input checked="" type="checkbox"/> NOT REPORTABLE				

 LOS ANGELES POWER DIVISION	PALO VERDE NUCLEAR GENERATING STATION PROJECT EVALUATION - DEFICIENCY EVALUATION REPORT JOB NO. 10407		REPORT NO. 82-56	
			REV./DATE 0 10-15-82	
		PAGE 1 OF 1		
PREPARED BY K. M. Schechter <i>Kms</i>	10/15/82	Q. CLASS Q	UNIT 1,2,3	REFERENCE DOCUMENTS Calculation 13-CC-CT-015
NAME DATE				
PART 21 REPORTABILITY: IF THE ANSWER TO ANY OF THESE CRITERIA (SEE PQPM 16.2 FOR DEFINITIONS) ARE NO THEN THE CONDITION IS NOT REPORTABLE UNDER PART 21.				
1. DOES THE DEFECT EXIST IN A BASIC COMPONENT?		<input type="checkbox"/> YES	<input type="checkbox"/> NO	
2. DOES THE DEFECT PRESENT A SUBSTANTIAL SAFETY HAZARD?		<input type="checkbox"/> YES	<input type="checkbox"/> NO	
3. HAS THE COMPONENT BEEN DELIVERED OR OFFERED FOR ACCEPTANCE?		<input type="checkbox"/> YES	<input type="checkbox"/> NO	
PROJECT EVALUATION <input checked="" type="checkbox"/> INTERIM REPORT <input type="checkbox"/> 50.55(e) FINAL REPORT <input type="checkbox"/> PART 21 REPORT				
I. <u>POTENTIAL PROBLEM</u>				
<p>This report was initiated as a result of the Torrey Pines Technology Independent Evaluation of PVNGS which requested that the design of the Condensate Storage Tank (CST) be re-evaluated.</p> <p>The CST is required to be designed to resist stresses resulting from operating and extreme environment/accident seismic forces. The analysis and design of the CST was based on the design of the Refueling Water Tank. Wall reinforcement was scaled down because of the decreased height and mass of the CST without performing separate calculations. A preliminary engineering review has indicated that the scaling approach utilized may not be appropriate and a separate calculation to confirm the integrity of the CST is being performed.</p>				
II. <u>PROBLEM RESOLUTION PLAN</u>				
<p>Bechtel Engineering is currently performing a detailed analysis of the CST design and will coordinate and disposition the results of this evaluation with Torrey Pines Technology.</p>				
III. <u>STATUS OF CORRECTIVE ACTION</u>				
<p>The completed evaluation and final report are forecast to be completed by 12-15-82.</p>				
IDENTIFY CALCULATION OR OTHER DESIGN DOCUMENT WHICH WILL BE INITIATED OR REVISED TO SUPPORT THIS EVALUATION. N/A		SAR IMPACT <input type="checkbox"/> YES <input checked="" type="checkbox"/> NO <i>P. B...</i> 10-15-82 NGS DATE		
DOCUMENT TITLE, NUMBER, AND REVISION AND FORECAST COMPLETION DATE				
PEM EVALUATION AND REPORTABILITY RECOMMENDATION				
<i>D. Keith</i>		10/15/82		
PEM		DATE		
<input type="checkbox"/> REPORTABLE <input type="checkbox"/> NOT REPORTABLE				

 LOS ANGELES POWER DIVISION		DEFICIENCY EVALUATION REPORT 10 CFR 50.55(e) AND/OR 10 CFR PART 21		REPORT NO. 82-56 REV. NO. 0 DATE 9/30/82 PAGE 1 OF 1	
2. PROJECT - NAME/JOB NUMBER PVNGS - 10407		3. UNIT 1,2,3	4. Q CLASS Q	5. REFERENCE DOCUMENTS Calculation 13-CC-CT-015	
6. SEISMIC CATEGORY I		7. HOW DISCOVERED Per Torrey Pines Technology Independent Evaluation of PVNGS			
8. REQUIREMENT The Condensate Storage Tank (CST) is required to be designed to resist stresses resulting from operating and extreme environment/accident seismic forces.					
9. DESCRIPTION OF CONDITION The analysis and design of the CST was based on the design of the Refueling Water Tank. Wall reinforcement was scaled down because of the decreased height and mass of the CST without performing separate calculations. A preliminary engineering review has indicated that the scaling approach utilized may not be appropriate and a separate calculation to confirm the integrity of the CST is being performed.					
10. REPORT INITIATOR K. M. Schechter <i>K. M. Schechter</i>			12. QA DELIVERY OF DER TO. <i>J.D. Houchen</i> J.D. Houchen 10/1/82 10:20 AM 10/1/82 11:40 AM 10/1/82 1:05 AM		
11. QA VALIDATION OF BLOCKS 1-10 <i>R. G. [illegible]</i> 10/1/82 9:00 AM			13. PRELIMINARY EVALUATION POTENTIALLY REPORTABLE YES <input checked="" type="checkbox"/> NO <input type="checkbox"/> DATE CLIENT NOTIFIED 10/15/82 (G.H. Duckworth)		
14. FINAL EVALUATION REPORTABLE YES <input type="checkbox"/> NO <input type="checkbox"/> 10CFR 50.55(e) REPORTABLE YES <input type="checkbox"/> NO <input type="checkbox"/> 10CFR 21 REPORT BY _____					
15. VERIFICATION OR CORRECTIVE ACTION TRANSFERRED TO NCR/CAR QA _____ DATE _____ <input type="checkbox"/> ACCEPTED <input type="checkbox"/> NO.					
16. DISTRIBUTION LIST <input checked="" type="checkbox"/> SITE CONST MGR <input checked="" type="checkbox"/> QA SUPERVISOR <input checked="" type="checkbox"/> PROJECT QE <input type="checkbox"/> PROJ PROC MGR <input checked="" type="checkbox"/> EVALUATION COMMITTEE <input type="checkbox"/> PROJ. DOC. CENTER <input checked="" type="checkbox"/> MGR OF QA OTHERS _____					



TORREY PINES TECHNOLOGY
P.O. Box 81608
San Diego, California 92138
Telephone: (714) 455-2654

A DIVISION OF GA Technologies Inc.
P.O. BOX 81608
SAN DIEGO, CALIFORNIA 92138

TPT:191:WAS:82
November 12, 1982

Mr. Keith L. Turley
Chairman and Chief
Executive Officer
Arizona Public Service Company
411 N. Central Avenue
Phoenix, Arizona 85004

Subject: Review of Corrective Action Plans

Dear Mr. Turley:


Enclosed are completed Review of Corrective Action Plans for the following
Potential Finding Reports:

2426-PFR-001
2426-PFR-007
2426-PFR-011
2426-PFR-012
2426-PFR-013
2426-PFR-014
2426-PFR-025
2426-PFR-027
2426-PFR-037

2426-PFR-039
2426-PFR-040
2426-PFR-043
2426-PFR-050
2426-PFR-065
2426-PFR-074
2426-PFR-083
2426-PFR-089

Please call me if you have any questions.

Sincerely,


W. A. Simon
Project Manager

cc: J. Roedel/APS
E. E. Van Brunt/APS
G. L. Wessman/TPT

REVIEW OF CORRECTIVE ACTION PLAN

PFR NO. 2426-PFR-039 REVISION A CAP NO. P-82-3-D

AFFECTED ITEM:

Condensate Storage Tank (CST)/Refueling Water Tanks (RWT)
Calculation 13-CC-CT-015

REVIEW & COMMENT BY GA INITIATOR:

DOES THE PLAN INDICATE FULL UNDERSTANDING OF THE PROBLEM? YES ☒ NO ☐
 DOES THE PLAN ADDRESS THE PROBLEM IN ENOUGH DETAIL? * YES ☒ NO ☐
 DOES THE PLAN INDICATE ACCEPTABLE CORRECTIVE ACTION? YES ☒ NO ☐
 DOES THE PLAN INDICATE CORRECTION OF SIMILAR PROBLEMS? YES ☒ NO ☐

OTHER COMMENTS:

*Although BPC's Deficiency Evaluation Reports 82-56 & 82-63 have not addressed the specific problem of CST and RWT wall design in sufficient detail, the plan and procedure to identify and evaluate the cause of the observed problem are considered acceptable.

REVIEWED BY: K. C. CheungDATE: 11-9-82

REVIEW & COMMENT BY GA TASK LEADER

The DER process is a formal and highly visible process which should address the specific concern in this Finding adequately.

REVIEWED BY: [Signature]DATE: 11/9/82

COMMENTS BY FINDINGS REVIEW COMMITTEE:

The CAP is acceptable.

BY: [Signature]DATE: 11/9/82

COMMENTS BY GA PROJECT MANAGER:

CAP acceptable.

BY: [Signature]DATE: 11/9/82

Arizona Public Service Company

P.O. BOX 21666 • PHOENIX, ARIZONA 85036

October 20, 1982

ANPP-22046-JAR

Mr. W. A. Simon
Project Manager
Torrey Pines Technology
10955 John J. Hopkins Drive
San Diego, California 92121

Subject: Potential Finding Reports Classified as "Findings"
File: 82-003-002

Dear Mr. Simon:

We have reviewed the Potential Findings classified as "Findings" and have prepared specific corrective action plans for each item.

Attached for your review are the corrective action plans for Potential Finding Reports (PFR's) No. 011, 012, 013, 025, 037, 039, 040 and 043.

Very truly yours,


Keith Turley
Chairman of the Board and
Chief Executive Officer

KT:mft

Attachments

cc: O. M. De Michele
T. G. Woods, Jr.
E. E. Van Brunt, Jr.
G. C. Andognini
J. A. Roedel
W. E. Ide



1.

CORRECTIVE ACTION REQUEST

DATE October 11, 1982CAR NO. 82-19S - pg. 2PROJECT NAME PVNGSJOB NO. 10407☐ FIELD☒ OFFICE PAGE 1 OF 2

2. CONTROLLING DOCUMENT

Torrey Pines Technology PFR2426-PFR-040 Rev. A

3. SURVEILLANCE/AUDIT TOPIC
TPT Technical Review

4. WHERE FOUND During independent QA evaluation of PVNGS

5. DISCUSSED WITH

K. Schechter/J. Mahlmeister

6. INITIATOR

R. W. Welcher *RW Welcher*

7. APPROVED BY:

*RW Welcher*8. ☒ PROJECT☐ MANAGEMENT☐ AUDIT☒ SURVEILLANCE

9. REQUIREMENT

Acceptable Engineering Practice

10. FINDING

☒ ISOLATED OCCURRENCE☐ REPETITIVE☐ GENERIC☐ UNDETERMINEDReference: Condensate Storage Tank/Refueling Water Tank Calculation
13-CC-CT-015, Drawing No. 13-C-CTS-701, Rev. 6.

1. In the design of tank roof stainless steel plate (page D-22 of calculation) the plate size (8' 9" x 6' 7") investigated did not represent the largest panel shown in drawing 13-C-CTS-701, which is 12' 6" x 8' 10" x 6' 11 1/2" approx. (contd pg 2)

11. RECOMMENDED ACTION(S)

☒ REMEDIAL☒ CORRECTIVE☐ INVESTIGATIVE

Review reference calculation to verify accuracy of input data.
Revise as necessary.

12. SCHEDULED COMPLETION DATE

November 10, 1982

13. RESPONSIBILITY FOR CORRECTIVE ACTION

W. G. Bingham, Project Engineering Manager

14. CORRECTIVE ACTION TAKEN

See page 2

Cause - see APS letter of Nov. 3, 1982.

15. DATE COMPLETED

10/28/82

16. APPROVED (RESPONSIBLE AUTHORITY)

RSW A. Bingham JEM

17. CORRECTIVE ACTION

☒ STATEMENT ACCEPTED

CORRECTIVE ACTION

☐ STATEMENT NOT ACCEPTEDQAE *RW Welcher*DATE 10/29/82

QAE _____

DATE _____

18. VERIFICATION OF CORRECTIVE ACTION

19. CORRECTIVE ACTION

☐ ACCEPTED

CORRECTIVE ACTION

☐ NOT ACCEPTED

QAE _____

DATE _____

QAE _____

DATE _____

20. DISTRIBUTION

W. G. Bingham

W. A. Brandes

D. R. Hawkinson

D. T. Krishna

R. R. Stiens

W. H. Wilson

Client



CORRECTIVE ACTION REQUEST
(CONTINUATION SHEET)

DATE 10-11-82
CAR NO. 82-19S *pg. 3*
☐ FIELD ☐ OFFICE PAGE 2 OF 2

PROJECT NAME PVNGS JOB NO. 10407

BLOCK 10 - FINDING (cont'd)

2. The use of 0.9 Fy for allowable stress is not consistent with normal operating loads (Po).
3. Since the calculation indicated allowable deflection for the 1/4" plate to be 0.125 in., the acceptability of computed deflection of 2.97 in. plus needs justification.

BLOCK 14 - CORRECTIVE ACTION TAKEN

The corrective actions being taken are two fold.

- 1) Clarification of the accident and normal operating pressures which will cause a vacuum condition on the top structure of the referenced tanks, and;
- 2) Recalculation of the larger size liner plate pressure or load capacities using revised boundary conditions for comparison with the operating pressures.

Operating Pressures

Calculation 13-MC-CH-201 will be revised to include the additional velocity head losses noted by TPT for the accident condition. The maximum normal operating discharge flowrates from the RWT will be determined to establish the corresponding suction condition.

Accident Condition Liner Plate Load Capacity

The larger size liner plate will be evaluated with three-sides fixed and one side simply supported to determine liner plate capacity. This calculation will use small deflection theory since, for the accident condition, it is expected that the capacity will equal or exceed the process operating pressures. If this is not the case, then a large deflection theory calculation will be made.

The pertinent additional design data to be determined are shown in the following table.

		Normal Operating		Accident Condition	
		Suction	Positive	Suction	Positive
Design Pressures (psig)	CST	None	+0.5	-0.5	+0.5
	RWT	TBD Item 1	Negl.	TBD Item 1	Negl.
Liner Plate Uniform Pressure Capacity (psig)		TBD Item 2	+0.5	TBD Item 2	+0.7

TBD = To be determined

Forecast completion date and final disposition is expected to be November 15, 1982.

A. A. Steens 10/28/82

Arizona Public Service Company

P.O. BOX 21666 • PHOENIX, ARIZONA 85036

November 3, 1982

ANPP-22189-JAR/TGWJr

Mr. W. A. Simon
Project Manager
Torrey Pines Technology
19055 John J. Hopkins Drive
San Diego, California 92121

Subject: Potential Findings Reports No. 039, (040) and 074
File: 82-003-002

Dear Mr. Simon:

The apparent root causes of the subject deficiencies are as follows:

PFR No. 039

The condensate storage tank (CST) design was based upon the refueling water tank (RWT) calculations, but the aspect ratio (diameter-to-height ratio) and sure charge (depth of burial) differences were non-conservative requiring a separate calculation for the CST. Also, any changes to the RWT calculation must also be considered in the CST analysis.

PFR No. (040)

The smaller liner plate size in the condensate storage tank (CST) roof was used for the design calculation. In addition, preliminary process operating pressures were used as the structural design criteria.

PFR No. 074

The Type 23 cable tray support wall connection design details were believed to be adequate. However, TPT's evaluation determined that this design may not be adequate.

Also enclosed, are (1) a corrective action plan documented on Corrective Action Request 82-19S; (2) project evaluation of Deficiency Evaluation Report (DER) No. 82-56; and (3) Deficiency Evaluation Report (DER) No. 82-63, all which document corrective actions for PFR No. 039 and PFR No. 040.

Very truly yours,

Keith Turley
Chairman of the Board and
Chief Executive Officer

KLt:skc

Enclosures

cc: O. M. DeMichele
T. G. Woods, Jr.
E. E. Van Brunt, Jr.
G. D. Andognini
J. A. Roedel
W. E. Ide



TORREY PINES TECHNOLOGY
P.O. Box 81608
San Diego, California 92138
Telephone: (714) 455-2654

A DIVISION OF GA Technologies Inc.
P.O. BOX 81608
SAN DIEGO, CALIFORNIA 92138

TPT:191:WAS:82
November 12, 1982

Mr. Keith L. Turley
Chairman and Chief
Executive Officer
Arizona Public Service Company
411 N. Central Avenue
Phoenix, Arizona 85004

Subject: Review of Corrective Action Plans

Dear Mr. Turley:

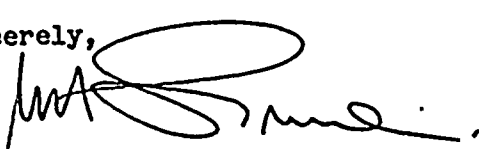
Enclosed are completed Review of Corrective Action Plans for the following
Potential Finding Reports:

2426-PFR-001
2426-PFR-007
2426-PFR-011
2426-PFR-012
2426-PFR-013
2426-PFR-014
2426-PFR-025
2426-PFR-027
2426-PFR-037

2426-PFR-039
2426-PFR-040
2426-PFR-043
2426-PFR-050
2426-PFR-065
2426-PFR-074
2426-PFR-083
2426-PFR-089

Please call me if you have any questions.

Sincerely,


W. A. Simon
Project Manager

cc: J. Roedel/APS
E. E. Van Brunt/APS
G. L. Wessman/TPT

REVIEW OF CORRECTIVE ACTION PLAN

040

PFR NO. 2426-PFR-~~030~~ REVISION A CAP NO. 82-19S

AFFECTED ITEM:

Condensate Storage Tank/Refueling Water Tank
Calculation 13-CC-CF015

REVIEW & COMMENT BY GA INITIATOR:

DOES THE PLAN INDICATE FULL UNDERSTANDING OF THE PROBLEM?	YES <input checked="" type="checkbox"/>	NO <input type="checkbox"/>
DOES THE PLAN ADDRESS THE PROBLEM IN ENOUGH DETAIL?	YES <input checked="" type="checkbox"/>	NO <input type="checkbox"/>
DOES THE PLAN INDICATE ACCEPTABLE CORRECTIVE ACTION?	YES <input checked="" type="checkbox"/>	NO <input type="checkbox"/>
DOES THE PLAN INDICATE CORRECTION OF SIMILAR PROBLEMS?	YES <input checked="" type="checkbox"/>	NO <input type="checkbox"/>

OTHER COMMENTS:

It should be noted that the boundary condition to be used in the liner plate evaluation as indicated in BPC's Corrective Action Request 82-19S is not considered conservative especially when the plate is subjected to suction. The edge of the plate attached by plug welds may not be assumed justifiably as fixed.

REVIEWED BY: K. C. Chueng *K. C. Chueng* DATE: 11/5/82

REVIEW & COMMENT BY GA TASK LEADER

In the event that the re-calculation does not result in acceptable stress, the corrective action should include consideration of a physical design change/correction.

REVIEWED BY: *[Signature]* DATE: 11/5/82

COMMENTS BY FINDINGS REVIEW COMMITTEE:

Agree with comments by the GA Initiator and the GA Task Leader. If these comments are taken into account the CAP is acceptable.

BY: *[Signature]* DATE: 11/5/82

COMMENTS BY GA PROJECT MANAGER:

Acceptable with comments.

BY: *[Signature]* DATE: 11/9/82

Arizona Public Service Company

P.O. BOX 21656 • PHOENIX, ARIZONA 85036

CAP P-82-4-D
Pg. 1

October 20, 1982
ANPP-22046-JAR

Mr. W. A. Simon
Project Manager
Torrey Pines Technology
10955 John J. Hopkins Drive
San Diego, California 92121

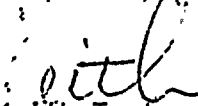
Subject: Potential Finding Reports Classified as "Findings"
File: 82-003-002

Dear Mr. Simon:

We have reviewed the Potential Findings classified as "Findings" and have prepared specific corrective action plans for each item.

Attached for your review are the corrective action plans for Potential Finding Reports (PFR's) No. 011, 012, 013, 025, 037, 039, 040 and 043.

Very truly yours,


Keith Turley
Chairman of the Board and
Chief Executive Officer

KT:mft


Attachments

cc: O. M. De Michele
T. G. Woods, Jr.
E. E. Van Brunt, Jr.
G. C. Andognini
J. A. Roedel
W. E. Ide



CORRECTIVE ACTION REPORT

Page 1 of 1

Classification of Adverse Condition: (See Back of Form) <input type="checkbox"/> NONCOMPLIANCE <input checked="" type="checkbox"/> Deviation		CAR No. <u>P-82-4-D</u>
How Discovered: <input type="checkbox"/> Audit No. _____ <input checked="" type="checkbox"/> Other <u>PFR-043</u>		Reportability Evaluation: <input checked="" type="checkbox"/> Not Reportable <input type="checkbox"/> REF No. _____
Organization Responsible: Combustion Engineering	Date Discovered: August 31, 1982	Date Reply Due: November 15, 1982
Initiator(s): TPT/GA	Controlling Document: N/A	Discussed With: G. Huba
Requirement: N/A		
Description of Adverse Condition: See TPT Finding 2426-PFR-043/A attached .		
Recommended Corrective Action: The root cause of this Deficiency apparently is the lack of follow-up of changes described in Purchase Order supplements. Therefore, the recommended corrective action is to establish a follow-up system for technical changes described in Purchase Order supplements.		
Corrective Action - Including Action to Prevent Recurrence: (See Back of Form) See APS letters of Nov. 3, 1982, and Nov. 4, 1982.		
Prepared By: _____	Authorized By: 	Date: <u>10.15.82</u>
Corrective Action Evaluation:		
Comments	Acceptable _____ Not Acceptable _____	Verification Required YES _____ NO _____
Evaluator: _____		Date: _____
Verification:		
Comments	Acceptable _____ Not Acceptable _____	
Evaluator: _____		Date: _____

Arizona Public Service Company

P.O. BOX 21666 • PHOENIX, ARIZONA 85036

November 3, 1982
ANPP-22192-JAR/TGWJr

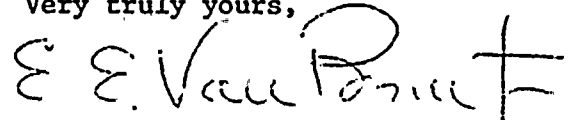
Mr. W. A. Simon
Project Manager
Torrey Pines Technology
19055 John J. Hopkins Drive
San Diego, California 92121

Subject: Corrective Action for PFR No. (043)
File: 82-003-002

Dear Mr. Simon:

The recommended corrective action as stated on the Corrective Action Reports concerning the subject preliminary finding report is the corrective action that will be implemented.

Very truly yours,



E. E. Van Brunt, Jr.
APS Vice President
Nuclear Projects
ANPP Project Director

EEVBJr/JAR:skc

cc: K. L. Turley
O. M. DeMichele
T. G. Woods, Jr.
G. C. Andognini
J. A. Roedel
W. E. Ide

ARIZONA



PUBLIC SERVICE COMPANY

STA. _____

P. O. BOX 21666 • PHOENIX, ARIZONA 85036

November 4, 1982

ANPP-22207-JAR/TGW

Mr. W. A. Simon
Project Manager
Torrey Pines Technology
10955 John J. Hopkins Drive
San Diego, California 92121

Subject: Potential Finding Reports Classified as "Findings"
File: 82-003-002

Dear Mr. Simon:

The following is the revised corrective action plan on Corrective
Action Request P-82-4D for the resolution of 2426 PFR-043.

1. CE will revise their procedure to ensure that changes in PO supplements will be followed-up in a timely manner by revising the effective design documents. *affected MAR 11-4-82*
2. CE should correct the deficiency identified or provide justification for not doing so.
3. CE should sample other procurement packages to determine if similar problems exist, or provide justification for not doing so.

Very truly yours,

E.E. Van Brunt *LTAC*

E. E. Van Brunt, Jr.
APS Vice President
Nuclear Projects
ANPP Project Director

EEVBJr/jp

cc: K. T. Turley
O. M. DeMichele
T. G. Woods, Jr.
G. C. Andognini
J. A. Roedel
W. E. Ide



TORREY PINES TECHNOLOGY
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A DIVISION OF GA Technologies Inc.
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SAN DIEGO, CALIFORNIA 92138

TPT:191:WAS:82
November 12, 1982

Mr. Keith L. Turley
Chairman and Chief
Executive Officer
Arizona Public Service Company
411 N. Central Avenue
Phoenix, Arizona 85004

Subject: Review of Corrective Action Plans

Dear Mr. Turley:

Enclosed are completed Review of Corrective Action Plans for the following
Potential Finding Reports:

2426-PFR-001	2426-PFR-039
2426-PFR-007	2426-PFR-040
2426-PFR-011	<u>2426-PFR-043</u>
2426-PFR-012	2426-PFR-050
2426-PFR-013	2426-PFR-065
2426-PFR-014	2426-PFR-074
2426-PFR-025	2426-PFR-083
2426-PFR-027	2426-PFR-089
2426-PFR-037	

Please call me if you have any questions.

Sincerely,


W. A. Simon
Project Manager

cc: J. Roedel/APS
E. E. Van Brunt/APS
G. L. Wessman/TPT

REVIEW OF CORRECTIVE ACTION PLAN

PFR NO. 2426-043 REVISION A CAP NO. P-82-4-D

AFFECTED ITEM:

Pre-Holdup Ion Exchanger

REVIEW & COMMENT BY GA INITIATOR:

DOES THE PLAN INDICATE FULL UNDERSTANDING OF THE PROBLEM? YES ☒ NO ☐
 DOES THE PLAN ADDRESS THE PROBLEM IN ENOUGH DETAIL? YES ☒ NO ☐
 DOES THE PLAN INDICATE ACCEPTABLE CORRECTIVE ACTION? YES ☒ NO ☐
 DOES THE PLAN INDICATE CORRECTION OF SIMILAR PROBLEMS? YES ☒ NO ☐

OTHER COMMENTS:

We interpret C-E procedures as not allowing changes to the technical requirements of Purchase Orders until the changes have been approved in the appropriate technical documents (C-E disagrees with this interpretation). Approval of changes in technical documents assures resolution of any design concerns prior to procurement. In addition, approval of design document changes before P.O. change assures that the plant configurations will be accurate and documented. However, implementation of a follow-up system to ensure the timely incorporation of the P.O. changes into technical documents will solve the problem if and when QA design procedures might be violated.

REVIEWED BY: J. Obenschain*J. Obenschain /JA*DATE: 11-4-82

REVIEW & COMMENT BY GA TASK LEADER

The plan is acceptable based on the 11/3 & 11/4 letters from APS. C-E believes their current procedure permit changes by PO supplements but agrees that they lack the requirement to followup & incorporate changes in the design documents.

REVIEWED BY: J. RiviereDATE: 11-4-82

COMMENTS BY FINDINGS REVIEW COMMITTEE:

CAP is acceptable providing item 2 & 3 in Van Brunt's letter to Simon (Revised Corrective Action Plan) are carried out.

BY: L. L. KoutzDATE: 11/5/82

COMMENTS BY GA PROJECT MANAGER:

Acceptable.

BY: [Signature]DATE: 11/9/82

Arizona Public Service Company

P.O. BOX 21666 • PHOENIX, ARIZONA 85036

October 25, 1982
ANPP-22100-JAR

Mr. W. A. Simon
Project Manager
Torrey Pines Technology
19055 John J. Hopkins Drive
San Diego, California 92121

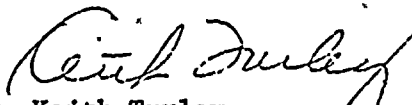
Subject: Potential Finding Reports Classified As "Findings"
File: 82-003-002

Dear Mr. Simon:

We have reviewed the Potential Findings classified as "Findings" and have prepared specific corrective action plans for each item.

Attached, for your review, are the corrective action plans for Potential Finding Reports (PFR's) No. 050, 065, 074, 083 and 089.

Very truly yours,


Keith Turley
Chairman of the Board and
Chief Executive Officer

KT:skc

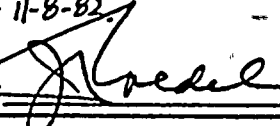
Attachments

cc: O. M. DeMichele
T. G. Woods, Jr.
E. E. Van Brunt, Jr.
G. C. Andognini
J. A. Roedel
W. E. Ide



CORRECTIVE ACTION REPORT

Page 1 of 1

Classification of Adverse Condition: (See Back of Form) <input type="checkbox"/> NONCOMPLIANCE <input checked="" type="checkbox"/> Deviation		CAR No. P-82-6-D
How Discovered: <input type="checkbox"/> Audit No. <input checked="" type="checkbox"/> Other PFR-050		Reportability Evaluation: <input checked="" type="checkbox"/> Not Reportable <input type="checkbox"/> REF No.
Organization Responsible: Bechtel Engineering	Date Discovered: September 24, 1982	Date Reply Due: November 11, 1982
Initiator(s): TPT/GA	Controlling Document: N/A	Discussed With: N/A
Requirement: N/A		
Description of Adverse Condition: Reference TPT Finding 2426-PFR-050		
Recommended Corrective Action: (1) Review results of frequency analysis to determine if there is a frequency mode close to the operating speed of the pump. (2) Monitor pump during start-up to verify that unusual vibration does not occur.		
Corrective Action - Including Action to Prevent Recurrence: (See Back of Form) The root cause of this Deficiency apparently was the lack of specific instructions from Combustion Engineering to perform a definitive calculation to determine operating frequency. See APS letter of Nov 2, 1982, and telecopy of 11-8-82.		
Prepared By:	Authorized By: 	Date: 10-15-82
Corrective Action Evaluation:		
Comments	Acceptable <input type="checkbox"/> Not Acceptable <input type="checkbox"/>	Verification Required YES <input type="checkbox"/> NO <input type="checkbox"/>
Evaluator:		Date:
Verification:		
Comments	Acceptable <input type="checkbox"/> Not Acceptable <input type="checkbox"/>	
Evaluator:		Date:

Arizona Public Service Company

P.O. BOX 21666 • PHOENIX, ARIZONA 85036

November 2, 1982
ANPP-22176-JAR/TGWJr

Mr. W. A. Simon
Project Manager
Torrey Pines Technology
19055 John J. Hopkins Drive
San Diego, California 92121

Subject: Corrective Action for PFR's 037, (050), 065, 083 and 089
File: 82-003-002

Dear Mr. Simon:

The recommended corrective action as stated on the Corrective Action Reports concerning the subject preliminary finding reports is the corrective action that will be implemented.

Very truly yours,

E.E. Van Brunt/JAR

E. E. Van Brunt, Jr.
APS Vice President
Nuclear Projects
ANPP Project Director

EEVBJr/JAR:skc

cc: O. M. DeMichele
T. G. Woods, Jr.
G. C. Andognini
J. A. Roedel
W. E. Ide

Arizona Public Service Company

P.O. BOX 21666 • PHOENIX, ARIZONA 85036

November 8, 1982
ANPP-22233-JAR/TGW**RECEIVED**
W. A. SIMON

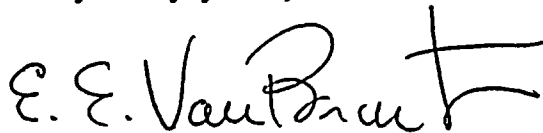
. NOV 15 1982

Mr. W. A. Simon
Project Manager
Torrey Pines Technology
10955 John J. Hopkins Drive
San Diego, California 92121COPIES _____
ROUTE _____
FILE _____Subject: Potential Finding Reports Classified as "Findings"
File: 82-003-002

Dear Mr. Simon:

Enclosed is additional corrective actions for Corrective Action
Reports P-82-6-D and C-82-44-D.

Very truly yours,

E. E. Van Brunt, Jr.
APS Vice President
Nuclear Projects Management
ANPP Project Director

EEVBJr/JAR:db

Attachments

cc: K. T. Turley
O. M. DeMichele
T. G. Woods, Jr.
G. C. Andognini
J. A. Roedel
W. E. Ide

aps.

CORRECTIVE ACTION REPORT
CONTINUATION SHEETCAR No. P-82-6-D

AMENDED CORRECTIVE ACTION

Page 2 of 2

Organization Responsible: Bechtel Engineering	Date Discovered: 9/24/82	Date Reply Due: 11/11/82
<p>Additional Corrective Action:</p> <ol style="list-style-type: none">1. Review frequency analysis for adequacy in treating combined response of pump and support structure (i.e., pump and motor assembly will be modeled as flexible components; determine if there is a frequency mode close to the operating speed of the pump). Alternatively perform vibration testing of pump and support.2. Corrective Action, if required, will include retuning the system.		



TORREY PINES TECHNOLOGY
P.O. Box 81608
San Diego, California 92138
Telephone: (714) 455-2654

A DIVISION OF GA Technologies Inc.
P.O. BOX 81608
SAN DIEGO, CALIFORNIA 92138

TPT:191:WAS:82
November 12, 1982

Mr. Keith L. Turley
Chairman and Chief
Executive Officer
Arizona Public Service Company
411 N. Central Avenue
Phoenix, Arizona 85004

Subject: Review of Corrective Action Plans

Dear Mr. Turley:

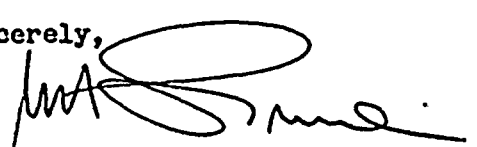
Enclosed are completed Review of Corrective Action Plans for the following
Potential Finding Reports:

2426-PFR-001
2426-PFR-007
2426-PFR-011
2426-PFR-012
2426-PFR-013
2426-PFR-014
2426-PFR-025
2426-PFR-027
2426-PFR-037

2426-PFR-039
2426-PFR-040
2426-PFR-043
2426-PFR-050
2426-PFR-065
2426-PFR-074
2426-PFR-083
2426-PFR-089

Please call me if you have any questions.

Sincerely,


W. A. Simon
Project Manager

cc: J. Roedel/APS
E. E. Van Brunt/APS
G. L. Wessman/TPT

REVIEW OF CORRECTIVE ACTION PLAN

PFR NO. 2426-PFR-50 REVISION B CAP NO. P-82-6-D

AFFECTED ITEM:

1. Containment Spray Pump SIB-P03
2. Pump Assembly Support Frame

REVIEW & COMMENT BY GA INITIATOR:

DOES THE PLAN INDICATE FULL UNDERSTANDING OF THE PROBLEM?	YES <input checked="" type="checkbox"/>	NO <input type="checkbox"/>
DOES THE PLAN ADDRESS THE PROBLEM IN ENOUGH DETAIL?	YES <input checked="" type="checkbox"/>	NO <input type="checkbox"/>
DOES THE PLAN INDICATE ACCEPTABLE CORRECTIVE ACTION?	YES <input checked="" type="checkbox"/>	NO <input type="checkbox"/>
DOES THE PLAN INDICATE CORRECTION OF SIMILAR PROBLEMS?	YES <input checked="" type="checkbox"/>	NO <input type="checkbox"/>

OTHER COMMENTS:

Leslie E Penzes

REVIEWED BY: Leslie E. Penzes DATE: OCT 29, 1982

REVIEW & COMMENT BY GA TASK LEADER

The corrective action should include the Safety Injection pumps (LPSI and HPSI) since these were supplied by the same vendor to a generic C-E spec, and BPC designed similar supports for these pumps.

REVIEWED BY: *[Signature]* DATE: 11/2/82

COMMENTS BY FINDINGS REVIEW COMMITTEE:

It is not clear that the CAP addresses the problem (which was that the analysis which has been performed to date does not include the combined response of the pump and its support).

SEE ATTACHED AMENDMENT

BY: *S. L. Kouty* *See attachment dated 11/9/82* DATE: 11/3/82

COMMENTS BY GA PROJECT MANAGER:

Amended CAP is acceptable.

BY: *[Signature]* DATE: 11/3/82

ATTACHMENT TO CAP P-82-6-D

November 9, 1982

Based on the amended corrective action dated 11/8/82 the CAP is acceptable, providing that if testing is performed, the test determines the margin between operating speed and critical speed of the pump/support assembly.

S. L. Kouz

11/9/82

Arizona Public Service Company

P.O. BOX 21666 • PHOENIX, ARIZONA 85036

October 25, 1982
ANPP-22100-JAR

Mr. W. A. Simon
Project Manager
Torrey Pines Technology
19055 John J. Hopkins Drive
San Diego, California 92121


Subject: Potential Finding Reports Classified As "Findings"
File: 82-003-002

Dear Mr. Simon:

We have reviewed the Potential Findings classified as "Findings" and have prepared specific corrective action plans for each item.

Attached, for your review, are the corrective action plans for Potential Finding Reports (PFR's) No. 050, 065, 074, 083 and 089.

Very truly yours,


Keith Turley
Chairman of the Board and
Chief Executive Officer

KT:skc

Attachments

cc: O. M. DeMichele
T. G. Woods, Jr.
E. E. Van Brunt, Jr.
G. C. Andognini
J. A. Roedel
W. E. Ide

RECEIVED
W. A. SIMON

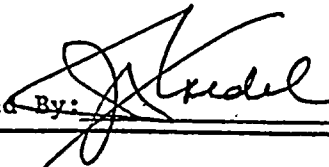
OCT 28 1982

COPIES.....
ROUTE.....
FILE.....



CORRECTIVE ACTION REPORT

Page 1 of 1

Classification of Adverse Condition: (See Back of Form) <input type="checkbox"/> NONCOMPLIANCE <input checked="" type="checkbox"/> Deviation		CAR No. P-82-5-D
How Discovered: <input type="checkbox"/> Audit No. <input checked="" type="checkbox"/> Other PFR-065		Reportability Evaluation: <input checked="" type="checkbox"/> Not Reportable <input type="checkbox"/> REF No.
Organization Responsible: Combustion Engineering	Date Discovered: September 30, 1982	Date Reply Due: November 15, 1982
Initiator(s): TPT/GA	Controlling Document: N/A	Discussed With: N/A
Requirement: N/A		
Description of Adverse Condition: Reference TPT Finding 2426-PFR-065, Issue B		
Recommended Corrective Action: (1) Conduct training of appropriate personnel to assure conformance to procedures. (2) Review a representative sample of documents to determine the extent of the procedure violation and review the documents to determine the affect on safety if the interface were not adequately addressed.		
Corrective Action - Including Action to Prevent Recurrence: (See Back of Form) The apparent root cause of this Deficiency is that procedures were not adequately followed. See APS letter of Nov. 2, 1982.		
Prepared By:	Authorized By: 	Date: 10.15.82
Corrective Action Evaluation: Comments Acceptable ___ Not Acceptable ___ Verification Required YES ___ NO ___ Evaluator: Date:		
Verification: Comments Acceptable ___ Not Acceptable ___ Evaluator: Date:		

Arizona Public Service Company

P.O. BOX 21666 • PHOENIX, ARIZONA 85036

November 2, 1982
ANPP-22176-JAR/TGWJr

Mr. W. A. Simon
Project Manager
Torrey Pines Technology
19055 John J. Hopkins Drive
San Diego, California 92121

Subject: Corrective Action for PFR's 037, 050, 065, 083 and 089
File: 82-003-002

Dear Mr. Simon:

The recommended corrective action as stated on the Corrective Action Reports concerning the subject preliminary finding reports is the corrective action that will be implemented.

Very truly yours,

E. E. Van Brunt

E. E. Van Brunt, Jr.
APS Vice President
Nuclear Projects
ANPP Project Director

EEVBJr/JAR:skc

cc: O. M. DeMichele
T. G. Woods, Jr.
G. C. Andognini
J. A. Roedel
W. E. Ide



TORREY PINES TECHNOLOGY
P.O. Box 81608
San Diego, California 92138
Telephone: (714) 455-2654

A DIVISION OF GA Technologies Inc.
P.O. BOX 81608
SAN DIEGO, CALIFORNIA 92138

TPT:191:WAS:82
November 12, 1982

Mr. Keith L. Turley
Chairman and Chief
Executive Officer
Arizona Public Service Company
411 N. Central Avenue
Phoenix, Arizona 85004

Subject: Review of Corrective Action Plans

Dear Mr. Turley:


Enclosed are completed Review of Corrective Action Plans for the following
Potential Finding Reports:

2426-PFR-001
2426-PFR-007
2426-PFR-011
2426-PFR-012
2426-PFR-013
2426-PFR-014
2426-PFR-025
2426-PFR-027
2426-PFR-037

2426-PFR-039
2426-PFR-040
2426-PFR-043
2426-PFR-050
2426-PFR-065
2426-PFR-074
2426-PFR-083
2426-PFR-089

Please call me if you have any questions.

Sincerely,


W. A. Simon
Project Manager

cc: J. Roedel/APS
E. E. Van Brunt/APS
G. L. Wessman/TPT

REVIEW OF CORRECTIVE ACTION PLAN

pg. 5

PFR NO. 2426-065 REVISION B CAP NO. 8-82-5-D

AFFECTED ITEM:

PVNGS Unit 1 Core Protection Calculator System (Software)

REVIEW & COMMENT BY GA INITIATOR:

DOES THE PLAN INDICATE FULL UNDERSTANDING OF THE PROBLEM? YES ☒ NO ☐
DOES THE PLAN ADDRESS THE PROBLEM IN ENOUGH DETAIL? YES ☒ NO ☐
DOES THE PLAN INDICATE ACCEPTABLE CORRECTIVE ACTION? YES ☒ NO ☐
DOES THE PLAN INDICATE CORRECTION OF SIMILAR PROBLEMS? YES ☒ NO ☐

OTHER COMMENTS:

The plan indicates an understanding of the problem and addresses the problem in sufficient detail. The attached letter from APS (11/1/82) states that the recommended corrective action on the Corrective Action Report will be implemented. Since GE has not yet responded, there is no "Corrective Action Plan" to review. However, this review is based on the assumption that C-E will properly carry out the "recommended" actions.

REVIEWED BY: J. M. Obenschain ~~J. M. Obenschain~~ J.M. OBENSCHAIN DATE: 11-3-82

REVIEW & COMMENT BY GA TASK LEADER

Agree with above. In addition, C-E should perform the reviews which were not performed as required, and document any such reviews.

REVIEWED BY: J. Brever DATE: 11/3/82

COMMENTS BY FINDINGS REVIEW COMMITTEE:

Agree with GA Task Leader comment.

BY: S. L. Kouty DATE: 11/3/82

COMMENTS BY GA PROJECT MANAGER:

Acceptable if reviews will be performed.

BY: [Signature] DATE: 11/3/82

THE UNIVERSITY OF CHICAGO
DIVISION OF THE PHYSICAL SCIENCES
DEPARTMENT OF PHYSICS
530 SOUTH EAST ASIAN AVENUE
CHICAGO, ILLINOIS 60607

TO: DIRECTOR, FBI
FROM: DIRECTOR, FBI

Arizona Public Service Company

P.O. BOX 21666 • PHOENIX, ARIZONA 85036

November 3, 1982
ANPP-22189-JAR/TGWJr

Mr. W. A. Simon
Project Manager
Torrey Pines Technology
19055 John J. Hopkins Drive
San Diego, California 92121

Subject: Potential Findings Reports No. 039, 040 and (074)
File: 82-003-002

Dear Mr. Simon:

The apparent root causes of the subject deficiencies are as follows:

PFR No. 039

The condensate storage tank (CST) design was based upon the refueling water tank (RWT) calculations, but the aspect ratio (diameter-to-height ratio) and sure charge (depth of burial) differences were non-conservative requiring a separate calculation for the CST. Also, any changes to the RWT calculation must also be considered in the CST analysis.

PFR No. 040

The smaller liner plate size in the condensate storage tank (CST) roof was used for the design calculation. In addition, preliminary process operating pressures were used as the structural design criteria.

PFR No. (074)

The Type 23 cable tray support wall connection design details were believed to be adequate. However, TPT's evaluation determined that this design may not be adequate.

Also enclosed, are (1) a corrective action plan documented on Corrective Action Request 82-19S; (2) project evaluation of Deficiency Evaluation Report (DER) No. 82-56; and (3) Deficiency Evaluation Report (DER) No. 82-63, all which document corrective actions for PFR No. 039 and PFR No. 040.

Very truly yours,

Keith Turley
Chairman of the Board and
Chief Executive Officer

KLT:skc

Enclosures

cc: O. M. DeMichele
T. G. Woods, Jr.
E. E. Van Brunt, Jr.
G. D. Andognini
J. A. Roedel
W. E. Ide

CORRECTIVE ACTION REQUEST		DATE 10-28-82 11/4/82
PROJECT NAME PVNGS JOB NO. 10407		CAR NO. PVH 82-21S Rev 1
		<input type="checkbox"/> FIELD <input checked="" type="checkbox"/> OFFICE PAGE 1 OF 2
2. CONTROLLING DOCUMENT Torrey Pines Technology PFR 2426-PFR-074 Rev. B		3. SURVEILLANCE/AUDIT TOPIC TPT Technical Review
4. WHERE FOUND During Independent QA Evaluation of PVNGS		5. DISCUSSED WITH K. Schechter/J. Mahlmeister
6. INITIATOR R. W. Welcher	7. APPROVED BY: <i>[Signature]</i>	8. <input checked="" type="checkbox"/> PROJECT <input type="checkbox"/> MANAGEMENT <input type="checkbox"/> AUDIT <input checked="" type="checkbox"/> SURVEILLANCE
9. REQUIREMENT Acceptable Engineering practice. (All members of tray support connection details should be within allowable stresses.)		
10. FINDING <input checked="" type="checkbox"/> ISOLATED OCCURRENCE <input type="checkbox"/> REPETITIVE <input type="checkbox"/> GENERIC <input type="checkbox"/> UNDETERMINED References: Dwg. 13-E-ZAC-048 (Type 23) Calc. 13-CC-ZS-005 TPT Impact statement of 10/14/82 PFR-074B (cont'd on page 2)		
11. RECOMMENDED ACTION(S) <input checked="" type="checkbox"/> REMEDIAL <input checked="" type="checkbox"/> CORRECTIVE <input type="checkbox"/> INVESTIGATIVE Evaluate the above loading condition to complete the required corrective action. Also, based upon a telecon with TPT 1/4/82, BPC will include in the evaluation the acceptability of using detail (14) with the other types of tray supports as permitted by the drawings.		
12. SCHEDULED COMPLETION DATE November 29, 1982	13. RESPONSIBILITY FOR CORRECTIVE ACTION W. G. Bingham, Project Engineering Manager	
14. CORRECTIVE ACTION TAKEN The planned corrective action will be to calculate the total combined stresses for the Unistrut member as described by TPT. If the member is overstressed as indicated by TPT, a specific physical design correction will be developed and installed. This corrective action will be completed by November 15, 1982.		
15. DATE COMPLETED 10-29-82	16. APPROVED (RESPONSIBLE AUTHORITY) RS <i>[Signature]</i> 10/29/82	
17. CORRECTIVE ACTION STATEMENT ACCEPTED <input checked="" type="checkbox"/> CORRECTIVE ACTION <input type="checkbox"/> STATEMENT NOT ACCEPTED		
QAE <i>[Signature]</i> DATE 10/29/82 QAE _____ DATE _____		
18. VERIFICATION OF CORRECTIVE ACTION		
19. CORRECTIVE ACTION <input type="checkbox"/> ACCEPTED <input type="checkbox"/> NOT ACCEPTED		
QAE _____ DATE _____ QAE _____ DATE _____		
20. DISTRIBUTION W. G. Bingham W. A. Brandes D. R. Hawkinson D. T. Krishna R. R. Stiens W. H. Wilson Client		



CORRECTIVE ACTION REQUEST
(CONTINUATION SHEET)

PROJECT NAME PVNGS JOB NO. 10407

DATE 10-28-82 11/4/82
CAR NO. PVH-82-215 Rev 1
☐ FIELD ☒ OFFICE PAGE 2 OF 2

BLOCK 10 - FINDING (cont'd)

The referenced TPT Impact statement for PFF-10407 stated that the Type 23 cable tray connection (Detail 14 on dwg. 13-E-ZAC-043) was inadequate. This detail was analyzed and found to be adequate due to the stiffness contribution by the attaching structural members. These calculations, see attachment 1, were evaluated by TPI and they agreed with the above conclusion. However, TPT also determined that the vertical Unistrut member P1001A3 would be overstressed due to the additional moments not previously considered on that member. See attachment 2.

A teleconference on 10-28-82 with TPT personnel was held to understand how the overstressed condition could exist.

Arizona Public Service Company

P.O. BOX 21666 • PHOENIX, ARIZONA 85036

October 25, 1982
ANPP-22100-JAR

Mr. W. A. Simon
Project Manager
Torrey Pines Technology
19055 John J. Hopkins Drive
San Diego, California 92121


Subject: Potential Finding Reports Classified As "Findings"
File: 82-003-002

Dear Mr. Simon:

We have reviewed the Potential Findings classified as "Findings" and have prepared specific corrective action plans for each item.

Attached, for your review, are the corrective action plans for Potential Finding Reports (PFR's) No. 050, 065, 074, 083 and 089.

Very truly yours,


Keith Turley
Chairman of the Board and
Chief Executive Officer

KT:skc

Attachments

cc: O. M. DeMichele
T. G. Woods, Jr.
E. E. Van Brunt, Jr.
G. C. Andognini
J. A. Roedel
W. E. Ide

RECEIVED
W. A. SIMON

OCT 28 1982

COPIES.....
ROUTE.....
FILE.....



ANPP-22162-EEVBJr
November 1, 1982

Mr. W. A. Simon
Project Manager
Torrey Pines Technology
19055 John J. Hopkins Drive
San Diego, CA 92121

Subject: Potential Finding Reports Classified as "Findings"
File: 82-003-002

Dear Mr. Simon:

Attached for your review is the Corrective Action Plan for Potential Finding Report 074, which was mentioned, but not included with our letter of October 25, 1982.

If you have any questions on this item, please contact John Roedel or Ed Van Brunt.


Very truly yours,

Keith Turley
Chairman of the Board and
Chief Executive Officer

1b

Attachments

cc: O. M. De Michele
T. G. Woods
E. E. Van Brunt
G. C. Andognini
J. A. Roedel
W. E. Ide

 CORRECTIVE ACTION REQUEST		DATE <u>10-28-82</u> CAR NO. <u>PVH 82-21S</u> <i>pg. 6</i> <input type="checkbox"/> FIELD <input checked="" type="checkbox"/> OFFICE PAGE <u>1</u> OF <u>2</u>	
PROJECT NAME <u>PVNGS</u> JOB NO. <u>10407</u>			
2. CONTROLLING DOCUMENT <u>Torrey Pines Technology PFR 2426-PFR-074 Rev. B</u>		3. SURVEILLANCE/AUDIT TOPIC <u>TPT Technical Review</u>	
4. WHERE FOUND During Independent QA Evaluation of PVNGS		5. DISCUSSED WITH <u>K. Schechter/J. Mahlmeister</u>	
6. INITIATOR <u>R. W. Welcher</u>		7. APPROVED BY: <u>[Signature]</u>	
		8. <input checked="" type="checkbox"/> PROJECT <input type="checkbox"/> MANAGEMENT <input type="checkbox"/> AUDIT <input checked="" type="checkbox"/> SURVEILLANCE	
9. REQUIREMENTS <u>Acceptable Engineering practice. (All members of tray support connection details should be within allowable stresses.)</u>			
10. FINDING <input checked="" type="checkbox"/> ISOLATED OCCURRENCE <input type="checkbox"/> REPETITIVE <input type="checkbox"/> GENERIC <input type="checkbox"/> UNDETERMINED References: Dwg. <u>13-E-ZAC-048 (Type 23)</u> Calc. <u>13-CC-ZS-005</u> <u>TPT Impact statement of 10/14/82 PFR-074B</u> (cont'd on page 2)			
11. RECOMMENDED ACTION(S) <input checked="" type="checkbox"/> REMEDIAL <input checked="" type="checkbox"/> CORRECTIVE <input type="checkbox"/> INVESTIGATIVE <u>Evaluate the above loading condition to complete the required corrective action.</u>			
12. SCHEDULED COMPLETION DATE <u>November 29, 1982</u>		13. RESPONSIBILITY FOR CORRECTIVE ACTION <u>W. G. Bingham, Project Engineering Manager</u>	
14. CORRECTIVE ACTION TAKEN <u>The planned corrective action will be to calculate the total combined stresses for the Unistrut member as described by TPT. If the member is overstressed as indicated by TPT, a specific physical design correction will be developed and installed.</u> <u>This corrective action will be completed by November 15, 1982.</u>			
15. DATE COMPLETED <u>10-29-82</u>		16. APPROVED (RESPONSIBLE AUTHORITY) <u>RS [Signature] W. G. Bingham 10/29/82</u>	
17. CORRECTIVE ACTION <input type="checkbox"/> STATEMENT ACCEPTED <input type="checkbox"/> CORRECTIVE ACTION <input type="checkbox"/> STATEMENT NOT ACCEPTED QAE _____ DATE _____		CORRECTIVE ACTION <input type="checkbox"/> STATEMENT NOT ACCEPTED QAE _____ DATE _____	
18. VERIFICATION OF CORRECTIVE ACTION			
19. CORRECTIVE ACTION <input type="checkbox"/> ACCEPTED <input type="checkbox"/> NOT ACCEPTED QAE _____ DATE _____		CORRECTIVE ACTION <input type="checkbox"/> NOT ACCEPTED QAE _____ DATE _____	
20. DISTRIBUTION <u>W. G. Bingham</u> <u>W. A. Brandes</u> <u>D. R. Hawkinson</u> <u>D. T. Krishna</u> <u>R. R. Stiens</u> <u>W. H. Wilson</u> <u>Client</u>			



CORRECTIVE ACTION REQUEST

(CONTINUATION SHEET) BLOCK 10

DATE 10-28-82

CAR NO. PVH-82-215

☐ FIELD☒ OFFICE

PAGE 2 OF 2

PROJECT NAME

PVNGS

JOB NO. 10407

BLOCK 10 - FINDING (cont'd)

The referenced TPT Impact statement for PFR-074 indicated that the Type 23 cable tray connection (Detail 14 on dwg. 13-E-ZAC-043) was inadequate. This detail was analyzed and found to be adequate due to the stiffness contribution by the attaching structural members. These calculations, see attachment 1, were evaluated by TPT and they agreed with the above conclusion. However, TPT also determined that the vertical Unistrut member P1001A3 would be overstressed due to the additional moments not previously considered on that member. See attachment 2.

A teleconference on 10-28-82 with TPT personnel was held to understand how the overstressed condition could exist.

ATTACHMENT #2 to CAP PVH 82-215 (3 pgs)

TELECOPY

10/28/82

Page 1 of 3

TO: J. Mahlmister
Bechtel - Downy

FROM: P. Rasmussen
Torrey Pines Technology
714-452-2132

$$\left(\frac{12.11}{121.0} \right) - \left(\frac{0.11}{121.0} \right) + \left(\frac{20.0}{121.0} \right)$$

$$\left(\frac{12.11}{121.0} \right) + \left(\frac{20.0}{121.0} \right) + \left(\frac{20.0}{121.0} \right)$$

CALCULATION SHEET

CALCULATIONS FOR

PFR 014 CORRECTIVE ACTION PLAN REVIEW

EQUIP. NO.

PROJ.

CALC. NO.

PAGE 1 OF 2

PREPARED BY

DATE

REF. DOCUMENTS

CHECKED BY

DATE

CNC 13-CC-25-005 CND 10/14/82
ALSO NAME OF SPEC. INSTRUCTIONS

MEMBER 6 JOINT 13

PAGE NUMBERS REFERENCE CALCULATION CND ON 10/10/82

$$M_v = 1.27^{k-l}$$

p. 7 MEMBER 6 MOMENT J

$$M_{ST} = 12.05^{k-l}$$

p. 9 MEMBER 6 MOMENT J

$$M_{SL} = 19.90^{k-l}$$

p. 14 MEMBER 1 MOMENT J

$$A_v = 1.20^{k-l}$$

p. 7 MEMBER 6 AXIAL J

$$A_{ST} = 6.33^{k-l}$$

p. 9 MEMBER 6 AXIAL J

$$A_{SL} = 3.19^{k-l}$$

p. 14 MEMBER 1 AXIAL J

ALL COMPUTER
OUTPUT LISTED
HERE MUST BE
ADJUSTED FOR
APPROPRIATE
LEVELS

$$a_v = 0.25$$

$$a_{ST} = 0.90$$

$$a_{SL} = 0.60$$

ASSUME TRANSVERSE BRACE AT EVERY OTHER SUPPORT AND
LONGITUDINAL BRACE AT EVERY SUPPORT

$$M_{DL} = 1.27$$

$$M_{SU} = 1.27 (0.75) = 0.95$$

$$A_{DL} = -1.20$$

$$A_{SU} = 1.20 (0.75) = 0.90$$

$$M_{ST} = 2 (12.05) 0.6 = 14.46$$

$$M_{SL} = 19.90 (0.9) = 17.91$$

$$A_{ST} = 2 (6.33) 0.6 = 7.60$$

$$A_{SL} = 3.19 (0.9) = 2.87$$

$$F_b = \frac{1.27}{1.304} + \sqrt{\left(\frac{0.95}{1.304}\right)^2 + \left(\frac{14.46}{1.304}\right)^2 + \left(\frac{17.91}{0.789}\right)^2} = 26.27 \text{ ksi}$$

$$F_a = -\frac{1.20}{1.304} + \sqrt{\left(\frac{0.9}{1.304}\right)^2 + \left(\frac{7.60}{1.304}\right)^2 + \left(\frac{2.87}{0.789}\right)^2} = 4.19 \text{ ksi}$$

FOR PROPSA

$$F_{tension} = 1.304$$

$$F_{compression} = 0.789$$

$$A = 1.665 \text{ in}^2$$

PAGE 2 OF

DATE _____

Phon Doc 3-36 W Asc

$$\frac{26.27}{31.7} + \frac{4.19}{12.36} = 1.20 \text{ NA}$$

2.3.7 1940 24 252 1374

6-25-1954

31.2.2021 22:34:40 1937 (100)

Page 2 of 2

114 115 116 117 118 119 120 121 122 123 124 125 126 127 128 129 130 131 132 133 134 135 136 137 138 139 140 141 142 143 144 145 146 147 148 149 150 151 152 153 154 155 156 157 158 159 160 161 162 163 164 165 166 167 168 169 170 171 172 173 174 175 176 177 178 179 180 181 182 183 184 185 186 187 188 189 190 191 192 193 194 195 196 197 198 199 200 201 202 203 204 205 206 207 208 209 210 211 212 213 214 215 216 217 218 219 220 221 222 223 224 225 226 227 228 229 230 231 232 233 234 235 236 237 238 239 240 241 242 243 244 245 246 247 248 249 250 251 252 253 254 255 256 257 258 259 260 261 262 263 264 265 266 267 268 269 270 271 272 273 274 275 276 277 278 279 280 281 282 283 284 285 286 287 288 289 290 291 292 293 294 295 296 297 298 299 300 301 302 303 304 305 306 307 308 309 310 311 312 313 314 315 316 317 318 319 320 321 322 323 324 325 326 327 328 329 330 331 332 333 334 335 336 337 338 339 340 341 342 343 344 345 346 347 348 349 350 351 352 353 354 355 356 357 358 359 360 361 362 363 364 365 366 367 368 369 370 371 372 373 374 375 376 377 378 379 380 381 382 383 384 385 386 387 388 389 390 391 392 393 394 395 396 397 398 399 400 401 402 403 404 405 406 407 408 409 410 411 412 413 414 415 416 417 418 419 420 421 422 423 424 425 426 427 428 429 430 431 432 433 434 435 436 437 438 439 440 441 442 443 444 445 446 447 448 449 450 451 452 453 454 455 456 457 458 459 460 461 462 463 464 465 466 467 468 469 470 471 472 473 474 475 476 477 478 479 480 481 482 483 484 485 486 487 488 489 490 491 492 493 494 495 496 497 498 499 500 501 502 503 504 505 506 507 508 509 510 511 512 513 514 515 516 517 518 519 520 521 522 523 524 525 526 527 528 529 530 531 532 533 534 535 536 537 538 539 540 541 542 543 544 545 546 547 548 549 550 551 552 553 554 555 556 557 558 559 560 561 562 563 564 565 566 567 568 569 570 571 572 573 574 575 576 577 578 579 580 581 582 583 584 585 586 587 588 589 590 591 592 593 594 595 596 597 598 599 600 601 602 603 604 605 606 607 608 609 610 611 612 613 614 615 616 617 618 619 620 621 622 623 624 625 626 627 628 629 630 631 632 633 634 635 636 637 638 639 640 641 642 643 644 645 646 647 648 649 650 651 652 653 654 655 656 657 658 659 660 661 662 663 664 665 666 667 668 669 670 671 672 673 674 675 676 677 678 679 680 681 682 683 684 685 686 687 688 689 690 691 692 693 694 695 696 697 698 699 700 701 702 703 704 705 706 707 708 709 710 711 712 713 714 715 716 717 718 719 720 721 722 723 724 725 726 727 728 729 730 731 732 733 734 735 736 737 738 739 740 741 742 743 744 745 746 747 748 749 750 751 752 753 754 755 756 757 758 759 760 761 762 763 764 765 766 767 768 769 770 771 772 773 774 775 776 777 778 779 780 781 782 783 784 785 786 787 788 789 790 791 792 793 794 795 796 797 798 799 800 801 802 803 804 805 806 807 808 809 810 811 812 813 814 815 816 817 818 819 820 821 822 823 824 825 826 827 828 829 830 831 832 833 834 835 836 837 838 839 840 841 842 843 844 845 846 847 848 849 850 851 852 853 854 855 856 857 858 859 860 861 862 863 864 865 866 867 868 869 870 871 872 873 874 875 876 877 878 879 880 881 882 883 884 885 886 887 888 889 890 891 892 893 894 895 896 897 898 899 900 901 902 903 904 905 906 907 908 909 910 911 912 913 914 915 916 917 918 919 920 921 922 923 924 925 926 927 928 929 930 931 932 933 934 935 936 937 938 939 940 941 942 943 944 945 946 947 948 949 950 951 952 953 954 955 956 957 958 959 960 961 962 963 964 965 966 967 968 969 970 971 972 973 974 975 976 977 978 979 980 981 982 983 984 985 986 987 988 989 990 991 992 993 994 995 996 997 998 999 1000

0.5 (5.5% average) per year

[illegible]

CALCULATION SHEET

ATTACHMENT 1 TO CASE PVH-82-21S (13 PGS)

CALC. NO. 13-CC-25-005

SIGNATURE T. YONG

DATE 10/13/82

CHECKED PD

DATE 10/14/82

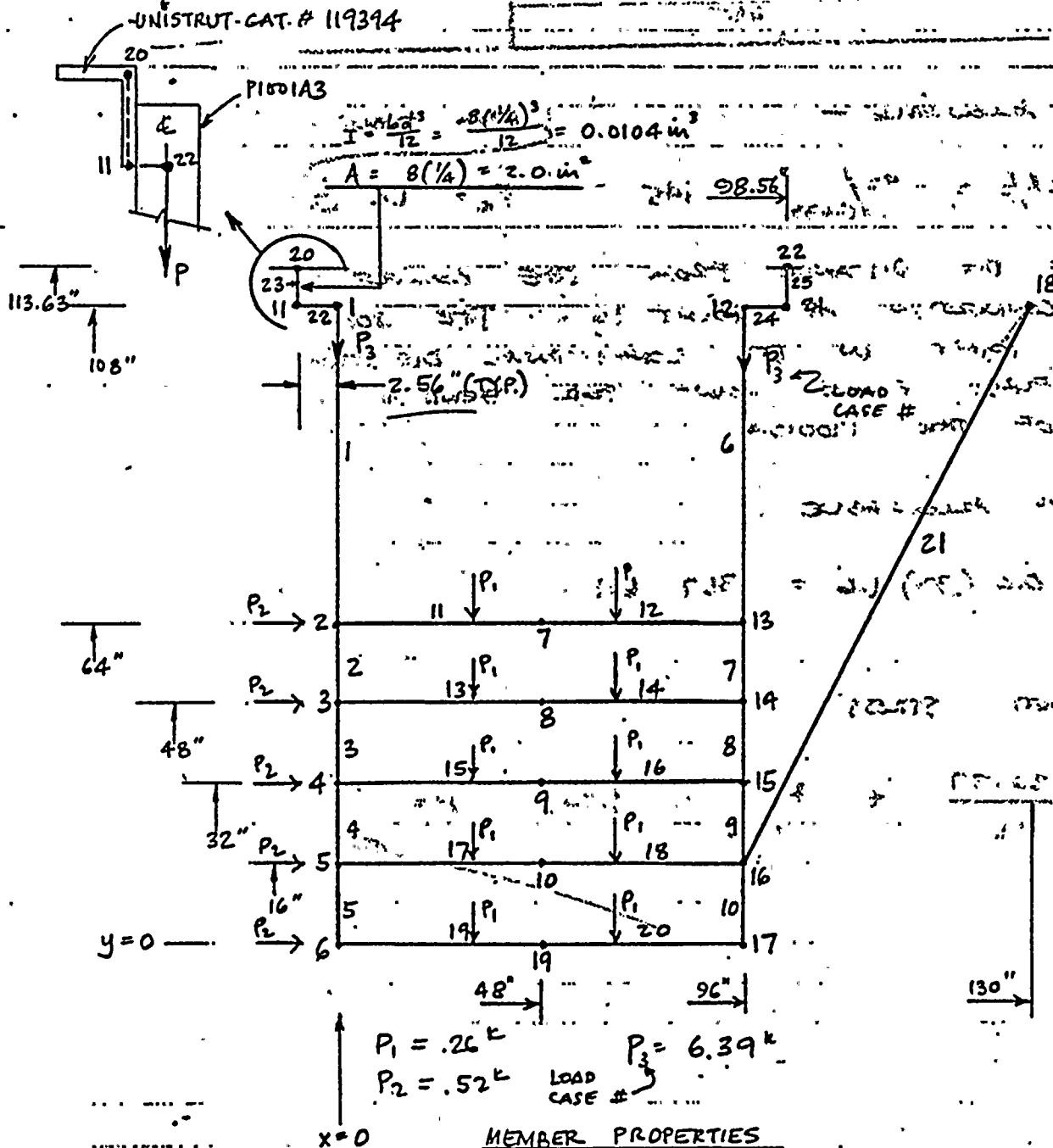
PROJECT PVNGS

JOB NO. 10407-002

CASE PVH 82-21S

SUBJECT CABLE - TRAY SUPPORTS

SHEET 1 OF 1 SHEETS



MEMBER PROPERTIES

	A (in ²)	I (in ⁴)
(P1001A3) VERTICAL MEMBERS	1.665	3.18
(P1004A) HORIZONTAL MEMBERS	1.95	4.062
(P1001) BRACE	1.11	0.478
UNISTRUT CAT # 119394 (MEMBER 23 & 25)	2.0	0.0104
MEMBER 22 & 24	100.0	100.0 (INFINITELY RIGID)



CALCULATION SHEET

CALC. NO. 13-CC-25-002

SIGNATURE T. YONG DATE 10/13/82

CHECKED CSE DATE 10-14-82
CAP PVH 82-215

PROJECT PUNGS

JOB NO. 10407-002 PG. 12

SUBJECT CABLE TRAY SUPPORTS

SHEET 2 OF 2 SHEETS

CALC. OF PERIODS. (Δ OBT. FROM COMP. OUTPUT)

$$(\Delta v)_{max} = [0.031^2 + 0.003^2]^{1/2} = 0.031 \text{ in.}$$

$$(T_{supp})_v = 2\pi \left[\frac{0.031}{386.4} \right]^{1/2} = 0.056 \text{ sec.}$$

$$(T_{sys})_v = [0.056^2 + 0.067^2]^{1/2} = 0.087 \text{ sec.}$$

$$(\Delta_T)_{max} = [0.174^2 + 0.006^2]^{1/2} = 0.174 \text{ in.}$$

$$(T_{supp})_T = 2\pi \left[\frac{0.174}{386.4} \right]^{1/2} = 0.133 \text{ sec.}$$

$$(T_{sys})_T = [0.133^2 + 0.008^2]^{1/2} = 0.133 \text{ sec.}$$

$$(T_{sys})_L = 0.368 \text{ sec. (FROM PREV CALCS BY P. DESAI DATED 4/15/82)}$$

FROM IRS AUX BLDG. LEVEL 120 FT. SSE 20% DMPG.

$$(a_v) = 0.75 \text{ g}$$

$$(a_T) = 0.60 \text{ g}$$

$$(a_L) = 0.90 \text{ g}$$

CALCULATE MAX. MOMENT ON ANGLE

(SEE MEMBER # 23)

$$(M)_{DL} = 0.33 \text{ in-k}$$

$$(M)_{SV} = 0.33 \times 0.75 = 0.25 \text{ in-k.}$$

$$(M)_{ST} = 2 \times 1.22 \times 0.6 = 1.46 \text{ in-k. (TRANSV. BRGG EV. OTHER SUPP.)}$$

$$(M)_{SL} = 1.39 \text{ in-k} \times 0.9 \times \frac{3.19}{6.39} = 0.62 \text{ in-k. WHERE } 3.19^k = P_{ASL}$$

AND $6.39^k = \text{AXIAL FORCE USED IN COMP. INPUT}$

$$\therefore M_T = 0.33 + [0.25^2 + 1.46^2 + 0.62^2]^{1/2}$$

$$= 1.94 \text{ in-k.}$$

$$S = \frac{bd^2}{6} = \frac{8(1/4)^2}{6} = 0.0833 \text{ in}^3$$

$$\therefore f_b = \frac{1.94}{0.0833} = 23.3 \text{ ksi.}$$

$$F_b = 0.75(33 \text{ ksi}) 1.6 = 39.6 \text{ ksi} > 23.3 \text{ ksi.}$$



TORREY PINES TECHNOLOGY
P.O. Box 81608
San Diego, California 92138
Telephone: (714) 455-2654

A DIVISION OF GA Technologies Inc.
P.O. BOX 81608
SAN DIEGO, CALIFORNIA 92138

TPT:191:WAS:82
November 12, 1982

Mr. Keith L. Turley
Chairman and Chief
Executive Officer
Arizona Public Service Company
411 N. Central Avenue
Phoenix, Arizona 85004

Subject: Review of Corrective Action Plans

Dear Mr. Turley:

Enclosed are completed Review of Corrective Action Plans for the following Potential Finding Reports:

2426-PFR-001
2426-PFR-007
2426-PFR-011
2426-PFR-012
2426-PFR-013
2426-PFR-014
2426-PFR-025
2426-PFR-027
2426-PFR-037

2426-PFR-039
2426-PFR-040
2426-PFR-043
2426-PFR-050
2426-PFR-065
2426-PFR-074
2426-PFR-083
2426-PFR-089

Please call me if you have any questions.

Sincerely,

W. A. Simon
Project Manager

cc: J. Roedel/APS
E. E. Van Brunt/APS
G. L. Wessman/TPT

REVIEW OF CORRECTIVE ACTION PLAN

pg. 14

PFR NO. 2426-PFR-074 REVISION A CAP NO. PVH 82-21S

AFFECTED ITEM:

Support 1EZA1DH17 (Unit 1) and connection Detail 14 on Dwg. 13-ZAC-043

REVIEW & COMMENT BY GA INITIATOR:

DOES THE PLAN INDICATE FULL UNDERSTANDING OF THE PROBLEM? YES ☒ NO ☐
DOES THE PLAN ADDRESS THE PROBLEM IN ENOUGH DETAIL? YES ☐ NO ☒
DOES THE PLAN INDICATE ACCEPTABLE CORRECTIVE ACTION? YES ☒ NO ☐
DOES THE PLAN INDICATE CORRECTION OF SIMILAR PROBLEMS? YES ☒ NO ☐

OTHER COMMENTS:

In Block 10 of the CAR, the finding should be classified as generic since connection Detail 14 is used throughout the plant design. The details needed for the revised Corrective Action Plan are: 1) Date of completion for the evaluation of connection Detail 14 and any subsequent physical corrective action, 2) to evaluate the acceptability of Detail 14, both the connection and the connecting members will be analyzed and if either is found to be overstressed a specific physical design correction will be developed and installed.

REVIEWED BY:

P. Rasmussen

DATE:

11/5/82

REVIEW & COMMENT BY GA TASK LEADER

The apparent cause of the problem is BPC's assumption of a shear-type connection wherein the moment effect of the eccentric vertical load was ignored in the analysis.

REVIEWED BY:

[Signature]

DATE:

11/5/82

COMMENTS BY FINDINGS REVIEW COMMITTEE:

CAP is acceptable.

BY:

[Signature]

DATE:

11/5/82

COMMENTS BY GA PROJECT MANAGER:

CAP acceptable.

BY:

[Signature]

DATE:

11/9/82

Arizona Public Service Company

P.O. BOX 21666--PHOENIX, ARIZONA 85036

CAP 882-44D

PS-1

October 25, 1982

ANPP-22100-JAR

Mr. W. A. Simon
Project Manager
Torrey Pines Technology
19055 John J. Hopkins Drive
San Diego, California 92121

Subject: Potential Finding Reports Classified As "Findings"
File: 82-003-002

Dear Mr. Simon:

We have reviewed the Potential Findings classified as "Findings" and have prepared specific corrective action plans for each item.

Attached, for your review, are the corrective action plans for Potential Finding Reports (PER's) No. 050, 065, 074, 083 and 089.

Very truly yours,

Keith Turley
Keith Turley
Chairman of the Board and
Chief Executive Officer

KT:skc

Attachments

cc: O. M. DeMichele
T. G. Woods, Jr.
E. E. Van Brunt, Jr.
G. C. Andognini
J. A. Roedel
W. E. Ide

OCT 28 1982

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ROUTE.....
FILE.....

CPS

CORRECTIVE ACTION REPORT

Page 1 of 2

Classification of Adverse Condition: (See Back of Form)		CAR No. C82-44D
<input type="checkbox"/> NONCOMPLIANCE <input checked="" type="checkbox"/> Deviation		
How Discovered: PFR-83/89		Reportability Evaluation:
<input type="checkbox"/> Audit No. <input checked="" type="checkbox"/> Other Torrey Pines		<input checked="" type="checkbox"/> Not Reportable <input type="checkbox"/> REF No.
Organization Responsible: Bechtel	Date Discovered: 9/21/82	Date Reply Due: 11/15/82
Initiator(s): TPT/GA S. Penick 10/11/82	Controlling Document: 10 CFR 50, Appendix B Criterion VIII	Discussed With: D. Grant
<p>Requirement: Measures shall be established for the identification and control of materials, parts, and components, including partially fabricated assemblies.</p> <p>These measures shall assure that identification of the item is maintained by heat number, part number, serial number, or other appropriate means, either on the item or (Cont.)</p>		
<p>Description of Adverse Condition: Contrary to the above, the Torrey Pines Technology (TPT) review of PVNGS indicated numerous instances where ID tags were either missing or incorrect. Some of the components inspected by TPT were part of transferred subsystems and were tagged incorrectly even though WP/P-QCI 31.0 states that tags are to be part of the inspection criteria. For specific instances see the following PFR's: 053, 067, 080, 083, 084, 089.</p>		
<p>Recommended Corrective Action:</p> <ol style="list-style-type: none"> 1. Review discrepancies noted by TPT and determine cause. 2. Perform an inspection on a sample of items to determine extent of discrepancy. 3. Develop a program to correct the cause of these discrepancies. 		
<p>Corrective Action - Including Action to Prevent Recurrence: (See Back of Form)</p> <p>The probable causes are:</p> <ol style="list-style-type: none"> (1) Tags have fallen off or have been inadvertently removed. (2) Verification of tagging information has not been meticulously conducted to verify each entry, both in the supplier's shop and at the jobsite. <p>See letter from APS dated Nov. 2, 1982.</p>		
Prepared By: _____		Authorized By: <i>[Signature]</i> Date: 10.15.82
Corrective Action Evaluation:		
Comments	Acceptable _____ Not Acceptable _____	Verification Required YES _____ NO _____
Evaluator: _____		Date: _____
Verification:		
Comments	Acceptable _____ Not Acceptable _____	
Evaluator: _____		Date: _____



CORRECTIVE ACTION REPORT
(Continuation Sheet)

CAR No. C82-44D

pg. 3

Page 2 Of 2

ORGANIZATION RESPONSIBLE:

Bechtel

DATE:

9/21/82

REPLY DUE:

11/15/82

Requirement (Cont.):

on records traceable to the item, as required throughout fabrication, erection, installation and use of the item.

These identification and control measures shall be designed to prevent the use of incorrect or defective material, parts, and components.

Arizona Public Service Company

P.O. BOX 21666 • PHOENIX, ARIZONA 85036

November 8, 1982
ANPP-22233-JAR/TGW

RECEIVED

W. A. SIMON

NOV 15 1982

Mr. W. A. Simon
Project Manager

Torrey Pines Technology
10955 John J. Hopkins Drive
San Diego, California 92121

COPIES

ROUTE

FILE

Subject: Potential Finding Reports Classified as "Findings"
File: 82-003-002

Dear Mr. Simon:

Enclosed is additional corrective actions for Corrective Action

Reports P-82-6-D and C-82-44-D.

Very truly yours,

E. E. Van Brunt

E. E. Van Brunt, Jr.
APS Vice President
Nuclear Projects Management
ANPP Project Director

EEVBJr/JAR:db

Attachments

cc: K. T. Turley
O. M. DeMichele
T. G. Woods, Jr.
G. C. Andognini
J. A. Roedel
W. E. Ide

aps.

CORRECTIVE ACTION REPORT
CONTINUATION SHEET

CAR No. C-82-44-D.

AMENDED CORRECTION ACTION

Page 2 of 2

Organization Responsible:	Date Discovered:	Date Reply Due:
Bechtel	9/21/82	11/15/82

Additional Corrective Action:

1. The sampling plan will have to include appropriate criteria for sample size and provisions for increasing the sample size depending upon the outcome of the inspection.
2. Missing or incorrect tags will be replaced.

Arizona Public Service Company

P.O. BOX 21666 • PHOENIX, ARIZONA 85036

November 22, 1982
ANPP-22176-JAR/TGWJr

Mr. W. A. Simon
Project Manager
Torrey Pines Technology
19055 John J. Hopkins Drive
San Diego, California 92121

Subject: Corrective Action for PFR's 037, 050, 065, 083 and 089
File: 82-003-002

Dear Mr. Simon:

The recommended corrective action as stated on the Corrective Action Reports concerning the subject preliminary finding reports is the corrective action that will be implemented.

Very truly yours,

E.E. Van Brunt

E. E. Van Brunt, Jr.
APS Vice President
Nuclear Projects
ANPP Project Director

EEVBJr/JAR:skc

cc: O. M. DeMichele
T. G. Woods, Jr.
G. C. Andognini
J. A. Roedel
W. E. Ide



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SAN DIEGO, CALIFORNIA 92138

TPT:191:WAS:82
November 12, 1982

Mr. Keith L. Turley
Chairman and Chief
Executive Officer
Arizona Public Service Company
411 N. Central Avenue
Phoenix, Arizona 85004

Mr. Keith L. Turley
Chairman and Chief
Executive Officer
Arizona Public Service Company
411 N. Central Avenue
Phoenix, Arizona 85004
S00-100-22 0114

Subject: Review of Corrective Action Plans

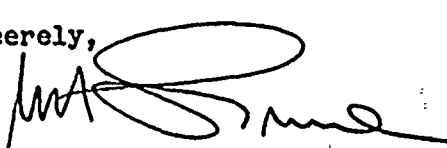
Dear Mr. Turley:

Enclosed are completed Review of Corrective Action Plans for the following
Potential Finding Reports:

2426-PFR-001	2426-PFR-039
2426-PFR-007	2426-PFR-040
2426-PFR-011	2426-PFR-043
2426-PFR-012	2426-PFR-050
2426-PFR-013	2426-PFR-065
2426-PFR-014	2426-PFR-074
2426-PFR-025	2426-PFR-083
2426-PFR-027	2426-PFR-089
2426-PFR-037	

Please call me if you have any questions.

Sincerely,


W. A. Simon
Project Manager

cc: J. Roedel/APS
E. E. Van Brunt/APS
G. L. Wessman/TPT

REVIEW OF CORRECTIVE ACTION PLAN

PFR NO. 083 (C), 089 (B) REVISION 1 CAP NO. C82-44D

AFFECTED ITEM: PFR-089: PFR-083: 1. Motor Oper. Valve-1P-AFB-V082;
 1. Valve 1P-SIBV074 (Unit 1) 2. Valve 1P-SIE-V827; 3. Cont. Spray Pump 2M-SIB-PO3
 2. Aux. Fdwtr Pump 1P-AFB-PO1 4. Valve 1P-AFB-V080; 5. Valve 1P-AFB-V138
 6. Valve 2P-AFB-V080; 7. Valve 2P-AFB-V082

REVIEW & COMMENT BY GA INITIATOR:

DOES THE PLAN INDICATE FULL UNDERSTANDING OF THE PROBLEM? YES ☒ NO ☐
 DOES THE PLAN ADDRESS THE PROBLEM IN ENOUGH DETAIL? YES ☐ NO ☒
 DOES THE PLAN INDICATE ACCEPTABLE CORRECTIVE ACTION? YES ☒ NO ☐
 DOES THE PLAN INDICATE CORRECTION OF SIMILAR PROBLEMS? YES ☒ NO ☐

OTHER COMMENTS: Additional details should include:

1. Size & Scope of initial audit used to determine extent of discrepancy.
2. Criteria for judging the results of the initial audit, (i.e., if X% of valves/equipment are mistagged or missing tags, a second audit, larger in size and scope, will be conducted and if X% of second audit items are mistagged or missing tags, the adverse condition may be classified as a noncompliance of a deviation).

(instead)

Inclusion of these items in the plan will make the Corrective Action Plan acceptable.

REVIEWED BY: P. Rasmusson/D. Phelps

DATE: 11/2/82

REVIEW & COMMENT BY GA TASK LEADER

Concur with the above comments.

REVIEWED BY: *[Signature]*

DATE: 11/2/82

COMMENTS BY FINDINGS REVIEW COMMITTEE:

CAP should include the details contained in the GA Initiator comments and an instruction to replace/correct all missing or incorrect tags which have been discovered by TPT as well as those which are discovered during the proposed inspection.

BY: *[Signature]*

SEE ATTACHED AMENDMENT

DATE: 11/3/82

COMMENTS BY GA PROJECT MANAGER:

See attachment dated 11/9/82

[Signature] 11/9/82

Amended CAP is acceptable.

BY: *[Signature]*

DATE: 11/9/82

100-1-100

100-1-100

100-1-100

100-1-100

100-1-100

