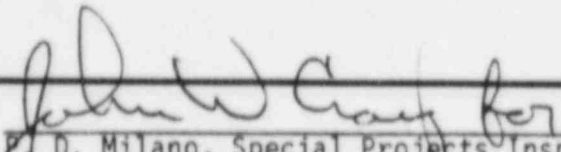
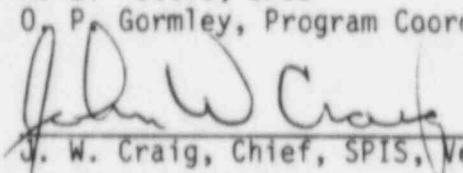


ORGANIZATION: BECHTEL POWER CORPORATION
EASTERN POWER DIVISION
GAITHERSBURG, MARYLAND

REPORT NO.: 99900519/85-01	INSPECTION DATE(S): 1/7-11/85	INSPECTION ON-SITE HOURS: 117
CORRESPONDENCE ADDRESS: Bechtel Power Corporation Eastern Power Division ATTN: Mr. H. W. Wahl Vice President & General Manager 15740 Shady Grove Road Gaithersburg, Maryland 20877-1454 ORGANIZATIONAL CONTACT: Mr. D. C. Kansal, Deputy Division QA Manager TELEPHONE NUMBER: (301) 258-3776		
PRINCIPAL PRODUCT: Architect-Engineering Services NUCLEAR INDUSTRY ACTIVITY: The Bechtel Eastern Power Division, Gaithersburg, Maryland has approximately 2000 people employed on domestic nuclear projects.		
ASSIGNED INSPECTOR:  P. D. Milano, Special Projects Inspection Section (SPIS)		5/29/85 Date
OTHER INSPECTOR(S): R. L. Pettis, SPIS O. P. Gormley, Program Coordination Section		
APPROVED BY:  J. W. Craig, Chief, SPIS, Vendor Program Branch		5/29/85 Date
INSPECTION BASES AND SCOPE: A. <u>BASES</u> : 10 CFR Part 21 and 10 CFR Part 50, Appendix B. B. <u>SCOPE</u> : Evaluate the procurement control program for safety-related equipment for the Standardized Nuclear Unit Power Plant Systems (SNUPPS) projects.		
PLANT SITE APPLICABILITY: Callaway (Union Electric) (50-481) and Wolf Creek (Kansas Gas & Electric) (50-483).		

ORGANIZATION: BECHTEL POWER CORPORATION
EASTERN POWER DIVISION
GAITHERSBURG, MARYLAND

REPORT
NO.: 99900519/85-01

INSPECTION
RESULTS:

PAGE 2 of 5

A. VIOLATIONS:

None.

B. NONCONFORMANCES:

1. Contrary to Criterion V of 10 CFR 50, Appendix B, and Bechtel Engineering Department Project Instruction EDPI-4.58-01, design test results were approved for the Battery Chargers which did not meet specification requirements.
2. Contrary to Criterion V of 10 CFR 50, Appendix B, and Bechtel Engineering Department Procedure EDP-4.54, objective evidence could not be provided to substantiate the certification of the Professional Engineers authorized to certify design specifications.
3. Contrary to Bechtel EDPI-4.58-01, the Seismic Analysis Report prepared by Wachter Associates, in accordance with Technical Specification 10466-C-175 for the Spent Fuel Storage Racks, utilized a damping value of 5%, which was provided by Bechtel but contrary to the specification requirement of 4%.

C. UNRESOLVED ITEMS:

1. Appendix A, Part 4.0, of Bechtel Technical Specification, 10466-C-175, Spent Fuel Storage Racks, requires the Seismic Analysis Report to contain a Certification of Compliance (C of C) attesting that all work was performed under the direction of a Registered Professional Engineer, whose seal should be displayed on the form. This document was also listed on Bechtel Form 321 D, "Engineering and Quality Verification Documentation," in the Specification as an item requiring Bechtel Engineering review and approval.

During the inspection, the above document could not be produced although the Seismic Report had already received Bechtel approval. The resolution of this item will be pending the location and identification of the Certificate of Compliance by Bechtel.

D. STATUS OF PREVIOUS INSPECTION FINDINGS:

1. (Closed) Nonconformance (84-01): Nine approved Engineering Department Project Instructions (EDPIs) did not have an issue date listed on the instruction.

The EDPIs were reviewed to verify incorporation of the issue date and found satisfactory.

REPORT
NO.: 99900519/85-01

INSPECTION
RESULTS:

PAGE 3 of 5

2. (Closed) Nonconformance (84-01): The design review process allowed power cable supplying Valcor solenoid valves to be specified that was not suitable for the required application.

A design change has been issued by the SNUPPS project to replace the field wiring with qualified high temperature wiring. Based on the response provided in the Bechtel letter of June 29, 1984, the corrective and preventive actions are acceptable.

E. OTHER FINDINGS AND COMMENTS:

1. Procurement Process Control

Selected documentation was reviewed for twelve (12) safety-related equipment purchase orders. This review evaluated the effect on the original design and regulatory commitments for changes to the purchase orders, Supplier Design Deviation Requests (SDDRs), Quality Supplier Deviation Reports (QSDRs), and nonconformances. In addition, Engineering and Quality Verification documentation, such as design reports, test reports, seismic and environmental qualification reports, and calculations, were reviewed for compliance with the specification requirements. Finally, correspondence and other documentation contained in the Supplier Quality and Purchasing Department files were reviewed for problems and evidence of proper evaluation and correction, such as Rework Plans.

- a. During the review of the purchase order documentation for the battery chargers, E-051, it was noted that these units experienced difficulty during initial operation which required the vendor to rework the units in the field. Because of this, the design change packages, called Rework Plans, and the subsequent field testing requirements were reviewed to determine that the units continued to comply with the design specification requirements. Earlier documentation of the design and production testing performed by the vendor was also reviewed. In this area, it was noted that the strip charts associated with the alternating and direct current transient voltage withstandability tests indicated that these tests were not fully conducted in accordance with National Electrical Manufacturers Association (NEMA) Standard PV-5-1976 which was delineated in the specification. Also, the battery size utilized for the ripple voltage measurement was smaller than stated by the NEMA Standard. The tests were reviewed by the Bechtel Supplier Quality Representative and approved by the Design Engineer, but without any statements as to

ORGANIZATION: BECHTEL POWER CORPORATION
EASTERN POWER DIVISION
GAITHERSBURG, MARYLAND

REPORT
NO.: 99900519/85-01

INSPECTION
RESULTS:

PAGE 4 of 5

the acceptability of these deviations. The short-circuit test method described in Power Conversion Products Process Specification PS-77-8, "Production Test Procedure of SNUPPS Battery Chargers in accordance with NEMA PV-5-1976 and Technical Specification 10466," dated March 16, 1977, did not correspond with the method of the NEMA Standard PV-5. However, a supplemental test record sheet provided with the final test data described the actual test conducted and results which were in compliance with the short-circuit test requirements of the NEMA standard.

- b. The review of the purchase order for Spent Fuel Storage Racks, C-175, centered on the seismic analysis and mechanical reports, Bechtel document numbers C-175-0014 and 0020 respectively. From the seismic analysis report, several areas were considered to lack conformity to the technical specification, Appendix A, which outlines the criteria for the report preparation. For example, the value used for significant seismic event (SSE) damping departed from specification requirements. In the generation of the dynamic response spectrum input, Bechtel provided to Wachter Associates an SSE damping value of 5% vice the 4% stated in the specification.

Additionally, Part 4.0 of Appendix A to the specification for the spent fuel storage racks, required that a Certification of Compliance, signed and approved by a Registered Professional Engineer, be provided with the seismic analysis report. This documentation could not be provided during the inspection although the report was found to be approved by Bechtel.

- c. The other purchase orders reviewed included: M-218A (Sub B), mechanical shock suppressors; M-067, spent fuel pool bridge crane; M-627B, Ruskin fire dampers; E-018, motor control center; J-301 Rosemount pressure and differential pressure cells; and J-359 containment hydrogen analyzers. The inspection in these areas did not result in any significant findings. Of note, however, was that the purchase order for the pressure and differential pressure cells was conducted without the assignment of a Supplier Quality Representative. It was Bechtel's determination that this instrumentation was of a standard design and that source inspection was not necessary, although several models were specifically nuclear grade and required seismic and environmental qualifications. In general, deviations from the specification were at times documented by various forms of correspondence, e.g., telexes,

REPORT
NO.: 99900519/85-01

INSPECTION
RESULTS:

PAGE 5 of 5

memos, letters, telegrams. Most of these changes from the specifications were of a nature that supporting analysis was not necessary (i.e., the substitution of a load limit switch for the motor overtorque protection required by the spent fuel pool bridge crane specification). More complex designs were processed by the formally established design change systems.

From this area of the inspection, two (2) nonconformances and one (1) unresolved item were identified.

2. Qualification of Personnel Performing ASME III Code Certification Activities

During the review of the documentation for the purchase orders, Bechtel could not provide objective evidence to support compliance with the qualification requirements of Engineering Department Procedure EDP-4.54 for two Registered Professional Engineers engaged in certification activities for both (a) the owners design specification and (b) the N certification holders design report. However, both employees were certified to perform such activities in March 1984 by their Chief Engineer. In the case of the torsional restraint design specification, employee #390844 certified a report in November 1984 over 15 months after the issuance of EDP-4.54.

The basis for the issuance of this EDP stems from the summer 1980 addenda to ASME III which became effective in December 1980. This addenda revised NCA-3255 to include ANSI/ASME N 626.3-1979 as the basis for establishing qualifications and duties of Professional Engineers engaged in Divisions 1 and 2 certification activities. Bechtel's EDP-4.54 was issued over three years after the June 30, 1980 release of the summer addenda.

From this area of the inspection, one (1) nonconformance was identified.

PERSONS CONTACTED

Company Bechtel - Eastern Power Div., Co. the others

Dates January 7-11, 1985

Docket/Report No. 99100519/25.01

Inspector P. M. ...Page 1 of 1

Chlorine

NAME(Please Print)

TITLE(Please Print)

ORGANIZATION(Please Print)

[illegible]

PERSONS CONTACTED

Company BECHTEL - EASTERN POWER DIV., GRANTSBURG

Dates January 7-11, 1935

Docket/Report No. 999005.9/85.01

Inspector P. D. Milano

Page 1 of 1

NAME(Please Print)

TITLE(Please Print)

ORGANIZATION(Please Print)

[illegible]

PERSONS CONTACTED

Company Bombardier - Engines Power Division

Dates January 11, 1968

Docket/Report No. 99900519/E5-01

Inspector P. Milano

EXIT MEETING

Page 1 of 1[illegible]

INSPECTOR P. D. MILANESCOPE Procurement Change
Control

DOCUMENTS EXAMINED

DOCKET NO. 99900519REPORT NO. 85-01PAGE 1 OF

ITEM NO.	TYPE OF DOCUMENT	DOCUMENT NO.	REV.	DATE	TITLE / SUBJECT
1	QAM		2	12/30/83	Procurement Supplier Quality Manual
2			17	9/83	SNUPPS Project Procurement Manual
3	PO	10466- E-051-1	11	12/24/83	P.O. For Battery Chargers, Power Conversion Products, Inc.
4	SPEC	10466- E-051(G)	5	11/21/83	Technical Specification For Battery Chargers For SNUPPS
5	QCD	C.F.C FCR F/012611	-	12/31/77	Certificate of Conformance for ECR 100 cable
6	Memo	-	-	6/27/77	D. Cramer to E. Simmek/N. Page Separated and Identification Criteria for Battery Chargers
7	Telecon	-	-	12/15/77	N. Page to R. Brown Failure of IEEE 323 Qualification Test
8	LTR	-	-	1/29/78	BPC to Power Conversion Products (C. Segor) BATTERY CHARGER Qualification
9	STO	NEMA PV-5-1976	-		NEMA STANDARD Battery Charger Continuous Potential Test Electric Voltage (Standard to State Charger)
10	QCD	PS-TT-B	1	3/11/77	Power Conversion Products Process Specification Production Test Procedure of SNUPPS Battery Charger in Accordance with NEMA PV-5-1976 and Technical Specification 10466
11	Telecon	-	-	4/14/83	D.T. Abell (BPC) to L. Lutz (RP) Battery Charger Review RE-051-A/B (Continuous Stream/Continuous Load)
12	LTR	BLSE- 12.05	-	4/22/83	J. Smith to N. Patrick Final Review Plan RE-051-A (Rev 2) and RE-051-B (Rev 1)
13	LTR	BLSE 12.05	-	4/29/83	J. Smith to N. Patrick Final Review Plan RE-051-B, Rev 2
14	PRO	EDP- 3.10.00	3	7/14/84	ENGINEERING DEPARTMENT PROWORDS WORK PLANS

TYPE OF DOC:

DWG - DRAWING
 SPEC - SPECIFICATION
 PRO - PROCEDURE
 QAM - QA MANUAL
 QCD - QC DOCUMENT
 P.O. - PURCHASE ORDER

LTR - LETTER

SCOPE _____

DOCKET NO. _____

PAGE _____ OF _____

TYPE OF DOC:

DWG - DRAWING
SPEC - SPECIFICATION
PRO - PROCEDURE
QAM - QA MANUAL
QCD - QC DOCUMENT

LTR - LETTER

Category	Item	Value
1. General Information	Name	John Doe
2. Contact Information	Address	123 Main St, New York, NY 10001
3. Financial Information	Income	\$50,000
4. Personal Information	Age	35
5. Other Information	Marital Status	Single

SCOPE _____

REPORT NO. _____ - _____

PAGE _____ OF _____

DOCUMENTS EXAMINED

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Figure 1 is a schematic representation of the experimental design. It shows a sequence of events: Pretest, Training, and Transfer. Each event has a corresponding box with a diagonal line, indicating a pretest or posttest. The boxes are arranged in a horizontal sequence, with arrows pointing from Pretest to Training and from Training to Transfer. A legend at the bottom indicates that the boxes with diagonal lines represent 'Pretest' and 'Posttest', and the solid boxes represent 'Training' and 'Transfer'.

INSPECTOR: ROBERT L. PETTIS, JR.**DOCUMENTS EXAMINED**DOCKET NO. 99900519REPORT NO. 85-01SCOPE: PROCUREMENT DOCUMENT CONTROLPAGE 1 OF 2

ITEM NO.	*TYPE OF DOCUMENT	DOCUMENT NO.	REV.	DATE	DOCUMENT TITLE/SUBJECT
1		M-212			Supplier Quality Assignment Package Torsional Restraints Gulf&Western
2	Pro		2	12/30/83	Bechtel Procurement Supplier Quality Manual
3	Qam				SNUPPS-Project Procurement Manual
4		M-218 A			SOSAP Pacific Scientific Mechanical Shock Arrestors (Sub B)
5	Pro	4.49-01	14	7/19/84	Engineering Department Project Instruction "Project Specifications"
6		C-175			Spent Fuel Storage Racks SOSAP
7	Pro	4.54	0	7/29/83	EDP "Qualification of Personnel Authorized to Perform ASME III Code Cer tifying Activities"
8	Pro	4.50	0	10/15/84	EDP " ASME III Design Specifications"
9	Code				ASME III Subsection NA Division 1, 1974
10	Calc.	SP-022	0		Main Steam Torsional Restraint-Postulated Pipe Break Analysis Non-Linear Transient Dynamic
11		SP-023			Finite Element Analysis for the above
12		4.54	0	3/23/84	Personnel Authorized to Pe rform ASME III Code Certifying Activities

***TYPE OF DOCUMENT**

DWG - DRAWING
SPEC - SPECIFICATION
PROC - PROCEDURE
QAM - QA MANUAL
P O - PURCHASE ORDER

INM - INTERNAL MEMO
LTR - LETTER

DOCUMENTS EXAMINED

INSPECTOR: Robert L. Pettis, Jr.

SCOPE: Procurement Document Control

DOCKET NO. 99900519

REPORT NO. 85-01

PAGE 2 OF 2

ITEM NO.	*TYPE OF DOCUMENT	DOCUMENT NO.	REV.	DATE	DOCUMENT TITLE/SUBJECT
13	QCD			1/1/85	Bechtel Supplier Print Control Register
14	Code				ASME III Subsection NCA Summer 1980 Addenda
15	Computer Output	C-175-0063	0	7/30/80	Spent Fuel Storage Racks-East West OBE Seismic
16	-do-	C-175-0064	0	-do-	-do- " " SSE "
17	Report	C-175-0014	0	10/5/79	Seismic Analysis Report for Spent Fuel Storage Racks
18	Code	N 626.3	0	1984	Qualifications and Duties of Persinnel Engaged in ASME Boiler and Pressure Vessel Code, Section III, Divisions 1 and 2, Certifying Activities.
19	Report	C-175-0020	0	11/30/79	Mechanical Report for Spent Fuel Storage Racks
20	Drawing	M-120-40	3		Wachter Associates Inc "Wall Seismic Details and Assembly" for the Spent Fuel Storage Racks.
21	Qam	# 029		10/1/82	US Tool and Die Quality Assurance Manual
22	Qam	MSQ 050175		11/30/83	1974 Edition-Bechtel QA Manual ASME III Division 1-SNUPPS
23	Code				ASME III Subsection NF 1980 Edition
24	Pro	4.58-01	4	9/18/81	Bechtel EDPI 4.58-01

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