Consumers Power Company

James W Cook
Vice President - Projects, Engineering and Construction

General Offices: 1945 West Parnall Road, Jackson, MI 49201 • (517) 788-0453

80-05 #5

June 12, 1981

Mr J G Keppler, Regional Director
Office of Inspection & Enforcement
US Nuclear Regulatory Commission
Region III
799 Roosevelt Road
Glen Ellyn, IL 60137

MIDLAND PROJECT -
DOCKET NOS 50-329, 50-330
SWAY STRUT ROD ENDS DEFICIENCY
FILE: 0.4.9.42 UFI: 73*10*01, 15240(E) SERIAL: 12016

References: J W Cook letters to J G Keppler, Same Subject:

1. Serial 9784, dated October 31, 1980
2. Serial 11009, dated January 15, 1981
3. Serial 11501, dated February 27, 1981
4. Serial 11968, dated April 10, 1981

The referenced letters were interim 50.55(e) reports concerning the sway strut rod ends deficiency. This letter is the final report.

Attachment 1 provides a summary of the actions which have been taken to resolve this problem.

James W. Cook

WRB/lr

Attachment 1: MCAR-42, Final Report (Revised June 10, 1981), "Loose Hanger Standard Parts Bushing"

CC: Director of Office of Inspection & Enforcement
Att Mr Victor Stello, USNRC (15)

Director, Office of Management
Information & Program Control, USNRC (1)

RJCook, USNRC Resident Inspector
Midland Nuclear Plant (1)

S 8106180236

CC: CBechhoefer, ASLB
RSDecker, ASLB
FPCowan, ASLB
AS&L Appeal Panel
MMCherry, Esq
MSinclair
CRStephens, USNRC
WDPaton, Esq, USNRC
FJKelly, Esq, Attorney General
SHFreeman, Esq, Asst Attorney General
GTTaylor, Esq. Asst Attorney General
WHMarshall
GJMerritt, Esq, TNK&J

 Bechtel Associates Professional Corporation

SUBJECT: MCAR 42 (issued 9/24/80)

Loose Hanger Standard Parts Bushing

FINAL REPORT

DATE: June 1, 1981 (Revised June 10, 1981)

PROJECT: Consumers Power Company
Midland Plant Units 1 and 2
Bechtel Job 7220

Introduction

This final report is prepared in response to MCAR 42. This concludes and summarizes our actions as previously reported in Interim Reports 1 through 4.

Description of Deficiency

Loose or totally disengaged rod end bushings supplied with specific sway struts were identified in Nonconformance Reports 3108, 3109, 3110, 3130, 3131, 3174, and 3188. The sway struts, snubbers, and shock suppressors utilizing these bushings were furnished by ITT Grinnell, NPS Industries, Corner & Lada, Inc, and Bergen-Paterson.

Potential Safety Implication

A potential safety problem would exist if the cap assembly became partially or totally disengaged from the bushing causing a binding or gap between the bushing and the intersurface of the clamp or rear bracket. Existence of this gap or binding during a seismic event could result in overstressing of piping and/or piping welds due to movement of the piping system. This overstressed condition could result in a significant safety hazard due to possible failure of the pressure boundary because of unanalyzed forces and movements.

Summary of Investigation and Historical Background

Loose bushings were identified on pipe support sway struts supplied by Corner & Lada, Inc to Union Electric Calloway Unit 1 and Kansas Gas and Electric Wolf Creek Generating Station. The deficiencies in the sway struts for Wolf Creek Generating Station were reported by Bechtel to the Nuclear Regulatory Commission (NRC) Inspection and Enforcement (I&E) Region IV in accordance with 10 CFR 50.55(e). Subsequently, these deficiencies were reported by Bechtel to the NRC I&E Region I in accordance with 10 CFR 21.

Based on this information, an investigation was performed at the Midland Plant Units 1 and 2. Deficiencies were noted in sway struts manufactured by ITT Grinnell, Pacific Scientific Industries, and NPS Industries, as well as those manufactured by Corner & Lada, Inc, previously identified in NCRs 3108, 3109, 3110, 3130, 3131, 3174, and 3188.

Bechtel informed the manufacturers of the deficiencies and requested they provide spacers as a generic solution to prevent disengagement of the bushings without precluding warranty. Bechtel has performed a dimensional analysis of all the relevant manufacturers' data to determine whether spacers would actually prevent the rod end bushings from becoming disengaged. The results of the analysis for the respective manufacturers are as follows:

1. ITT Grinnell

   Bechtel review of spacer sizes and bearing movement data provided by Grinnell indicated that only one mechanical shock arrestor (Figure 306/307, Size 1) can dislodge from its bushing. All other sizes of sway struts and mechanical shock arrestors were found to be acceptable. Grinnell indicated that it would provide larger spacers to replace those originally provided for Figure 306/307, Size 1 shock arrestors.

2. Bergen-Paterson

   Bechtel review of data provided by Bergen-Paterson indicated that installation of the recommended size spacers would prevent the bushings from becoming totally dislodged.

3. NPS Industries

   Bechtel review of data provided by NPS Industries, using the flexible bearing retainer dimensions with the spacer/washer dimensions previously provided, indicated that the rod end bushings would not become disengaged. However, the space between the upper clamp ears would be expanded as a result of the addition of these spacers. NPS was questioned about this discrepancy and stated it would not effect the sway strut design function. Bechtel finds this acceptable.

4. Corner & Lada, Inc

   Bechtel has received all necessary data from Corner & Lada, Inc and performed a dimensional analysis. The results of the dimensional analysis indicate that installation of the recommended size spacers would prevent the bushings from becoming totally dislodged.

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Corrective Action

Because the majority of sway struts have been received, receipt inspection procedures will not be modified as addressed in Interim Report 1, Corrective Action Item 4. Therefore, installation inspection will be performed by quality control prior to stress walkdown and/or system turnover. 6/9/81

Project engineering has accepted the Vendor's criteria for spacer/washer flexible bearing retainer requirements for each of the identified suppliers. The Vendor's criteria are set forth in controlled documents (Vendor drawings).

Construction quality control is scheduled to incorporate the engineering accepted criteria to prepare or revise existing Project Quality Control Instructions (by July 15, 1981) that will require verification of proper spacer/washer flexible bearing retainer installation of all sway struts, snubbers, and shock arrestors. 6/9/81

Reportability

Consumers Power Company reported this deficiency by telephone on August 24, 1980, to Mr. R. Sutphin, Office of Inspection and Enforcement, Region III, NRC, as a reportable deficiency for Midland Units 1 and 2 in accordance with 10 CFR 50.55(e).

This deficiency was reported, both verbally and by letter, by Bechtel on October 8, 1980, in accordance with 10 CFR 21 to Mr. James Keppler and Mr. R. Knopp, Office of Inspection and Enforcement, Region III NRC, by Mr. H. Wahl, Ann Arbor Power Division.

Submitted by: T. Ballweg

Approved by: L.H. Curtis

VDD Concurrence by: