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MAR 31 1981

Illinois Department of  
Nuclear Safety  
ATTN: Mr. Gary N. Waigat  
Deputy Director  
1035 Outer Park Drive  
Springfield, IL 62704

Gentlemen:

The enclosed IE Circular No. 81-05 titled "Self-Aligning Rod End Bushings for Pipe Supports" was sent to the licensees listed below for information on March 31, 1981:

American Electric Power Service Corporation  
Indiana and Michigan Power Company  
D. C. Cook 1, 2 (50-315, 50-316)

Cincinnati Gas & Electric Company  
Zimmer (50-358)

Cleveland Electric Illuminating Company  
Perry 1, 2 (50-440, 50-441)

Commonwealth Edison Company  
Braidwood 1, 2 (50-456, 50-457)  
Byron 1, 2 (50-454, 50-455)  
Dresden 1, 2, 3 (50-10, 50-237, 50-249)  
LaSalle 1, 2 (50-373, 50-374)  
Quad-Cities 1, 2 (50-254, 50-265)  
Zion 1, 2 (50-295, 50-304)

Consumers Power Company  
Big Rock Point (50-155)  
Midland 1, 2 (50-329, 50-330)  
Palisades (50-255)

Dairyland Power Cooperative  
LACBWR (50-409)

Detroit Edison Company  
Fermi 2 (50-341)

Illinois Power Company  
Clinton 1, 2 (50-461, 50-462)

Iowa Electric Light and Power Company  
Duane Arnold (50-331)

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Illinois Department of  
Nuclear Safety

- 2 -

Northern Indiana Public Service Company  
Bailly (50-367)

Northern States Power Company  
Monticello (50-263)  
Prairie Island 1, 2 (50-282, 50-306)

Public Service of Indiana  
Marble Hill 1, 2 (50-546, 50-547)

Toledo Edison Company  
Davis-Besse 1 (50-346)

Union Electric Company  
Callaway 1, 2 (50-483, 50-486)

Wisconsin Electric Power Company  
Point Beach 1, 2 (50-266, 50-301)

Wisconsin Public Service Corporation  
Kewaunee (50-305)

Sincerely,

Dorothy E. Carroll, Chief  
Word Processing and Document  
Control Section

Enclosure: IE Circular No. 81-05

cc w/encl:  
Mr. D. W. Kane, Sargent & Lundy  
Central Files  
Reproduction Unit NRC 20b  
AEOD  
Resident Inspectors, RIII  
J. G. Keppler, RIII  
Acting Division Directors, RIII  
P. R. Wohld, RIII  
PDR  
Local PDR  
NSIC  
TIC

RIII

Carroll/np  
3/31/81

Docket No. 50-315  
Docket No. 50-316

American Electric Power Service  
Corporation  
Indiana and Michigan Power Company  
ATTN: Mr. John E. Dolan  
Vice Chairman  
Engineering  
2 Broadway  
New York, NY 10004

cc w/encl:  
D. V. Shaller, Plant Manager  
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AD/Operating Reactors  
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Ronald Callen, Michigan  
Public Service Commission

Docket Nos. 50-10, 50-237, 50-249;  
50-254, 50-265; 50-295, 50-304; 50-373,  
50-374; 50-454, 50-455; 50-456, 50-457

Commonwealth Edison Company  
ATTN: Mr. Cordell Reed  
    Vic. President  
Post Office Box 767  
Chicago, IL 60690

cc w/encl:

J. S. Able, Director  
    of Nuclear Licensing  
D. J. Scott, Station  
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N. Kalivianakis, Plant  
    Superintendent  
K. L. Graesser, Station  
    Superintendent  
L. J. Burke, Site  
    Construction Superintendent  
T. E. Quaka, Quality  
    Assurance Supervisor  
R. H. Holyoak, Station  
    Superintendent  
B. B. Stephenson, Project  
    Manager  
V. I. Schlosser, Project  
    Manager  
R. E. Querio, Station  
    Superintendent  
Gunner Sorensen, Site  
    Project Superintendent  
R. Cosaro, Project  
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J. F. Gudac, Station  
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Mary Jo Murray, Office of  
    Assistant Attorney General  
Myron M. Cherry

Docket No. 50-358

Cincinnati Gas and Electric  
Company

ATTN: Mr. Earl A. Borgmann  
Senior Vice President  
Engineering Services  
and Electric Production

139 East 4th Street  
Cincinnati, OH 45201

cc w/encl:

J. R. Schott, Plant  
Superintendent

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AD/Operating Reactors

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Local PDR

NSIC

TIC

Harold W. Kohn, Power

Siting Commission

Citizens Against a Radioactive  
Environment

Helen W. Evans, State of Ohio

Docket No. 50-440  
Docket No. 50-441

The Cleveland Electric Illuminating  
Company  
ATTN: Mr. Dalwyn R. Davidson  
Vice President - System  
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Post Office Box 5000  
Cleveland, OH 44101

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Daniel D. Wilt, Attorney  
Helen W. Evans, State of Ohio

Docket No. 50-155  
Docket No. 50-255

Consumers Power Company  
ATTN: Mr. R. B. DeWitt  
Vice President  
Nuclear Operations  
212 West Michigan Avenue  
Jackson, MI 49201

cc w/encl:  
D. P. Hoffman, Nuclear  
Licensing Administrator  
C. J. Hartman, Plant  
Superintendent  
R. W. Montross, Manager  
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NSIC  
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Ronald Callen, Michigan  
Public Service Commission  
Myron M. Cherry

Docket No. 50-329

Docket No. 50-330

Consumers Power Company  
ATTN: Mr. James W. Cook  
Vice President  
Midland Project  
1945 West Parnall Road  
Jackson, MI 49201

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Ronald Callen, Michigan

Public Service Commission

Myron M. Cherry



Docket No. 50-409

Dairyland Power Cooperative  
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General Manager  
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R. E. Shimshak, Plant  
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AD/Operating Reactors

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Resident Inspector, RIII

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NSIC

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John J. Duffy, Chief

Boiler Inspector

Stanley York, Chairman

Public Service Commission

Docket No. 50-341

The Detroit Edison Company  
ATTN: Mr. Donald A. Wells  
Manager, Quality Assurance  
2000 Second Avenue  
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cc w/encl:  
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TIC  
Ronald Callen, Michigan Public  
Service Commission  
Eugene B. Thomas, Jr., Attorney

Docket No. 50-461

Docket No. 50-462

Illinois Power Company  
ATTN: Mr. W. C. Gerstner  
Executive Vice President  
500 South 27th Street  
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cc w/encl:

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Mary Jo Murray, Office of  
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Director

Randall L. Plant, Prairie  
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Docket No. 50-331

Iowa Electric Light and Power  
Company

ATTN: Mr. Duane Arnold  
President

IE Towers  
P. O. Box 351  
Cedar Rapids, IA 52406

cc w/encl:

D. Mineck, Chief  
Engineer

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Docket No. 50-367

Northern Indiana Public Service  
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ATTN: Mr. Eugene M. Shorb  
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5265 Hohman Avenue  
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Mary Jo Murray, Office of  
Assistant Attorney General

Docket No. 50-263  
Docket No. 50-282  
Docket No. 50-306

Northern States Power Company  
ATTN: Mr. Dennis E. Gilberts  
Senior Vice President  
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cc w/encl:

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John W. Ferman, Ph.D.,  
Nuclear Engineer, MPCA

Docket No. 50-546

Docket No. 50-547

Public Service of Indiana  
ATTN: Mr. S. W. Shields  
Senior Vice President  
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Post Office Box 190  
New Washington, IN 47162

cc w/encl:

Steve J. Brewer, Nuclear Safety  
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LeBoeuf, Lamb, Leiby & MacRae

Dave Martin, Office of the

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John R. Galloway, Staff

Director, Environment, Energy

and Natural Resources Subcommittee

Docket No. 50-346

Toledo Edison Company  
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cc w/encl:  
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Harold W. Kohn, Power  
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Docket No. 50-483

Docket No. 50-486

Union Electric Company  
ATTN: Mr. John K. Bryan  
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cc w/encl:

W. H. Weber, Manager  
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Division, Missouri Public  
Service Commission

Docket No. 50-266  
Docket No. 50-301

Wisconsin Electric Power Company  
ATTN: Mr. Sol Burstein  
Executive Vice President  
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cc w/encl:  
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John J. Duffy, Chief Boiler  
Inspector  
Peter Anderson, Wisconsin's  
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Stanley York, Chairman  
Public Service Commission

Docket No. 50-305

Wisconsin Public Service  
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W. Sayles, Chief Engineer  
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Stanley York, Chairman  
Public Service Commission

SSINS No: 6830  
Accession No.:  
8011040282  
IEC 81-05

UNITED STATES  
NUCLEAR REGULATORY COMMISSION  
OFFICE OF INSPECTION AND ENFORCEMENT  
WASHINGTON, D.C. 20555

March 31, 1981

IE Circular No. 81-05: SELF-ALIGNING ROD END BUSHINGS FOR PIPE SUPPORTS

Background:

By letter dated July 24, 1980, Bechtel Power Corporation notified NRC of generic deficiencies in pipe support sway struts furnished by Corner & Lada, Inc., to the Callaway and Wolf Creek sites. The specific deficiencies identified involved the clamp end of the sway strut becoming loose and possibly being disengaged from the bushing. This could result in a large gap in the support system not accounted for in the original analysis. This deficiency was reported to NRC pursuant to 10 CFR Part 21 on May 14, 1980.

In another letter dated October 8, 1980, Bechtel Power Corporation notified NRC of generic deficiencies in pipe support end bushings at Midland Units 1 and 2 and at Palisades. In this report, self-aligning rod end bushings on the ends of sway struts and snubbers furnished by ITT Grinnell, Pacific Scientific, NPSI, and Corner & Lada were found to be partially or totally disengaged from the structural component. This report was identified as a 10 CFR Part 21 notification.

Discussion:

The problem of loose bushings in snubber and sway strut assemblies is potentially generic to all sizes of all manufacturers' assemblies. However, the potential for complete disengagement of the bushing from the assembly is limited to those cases in which the assembly is attached to a clamp where the gap is sufficiently large to permit the paddle to slide completely over the bushing.

The consequences of complete disengagement of the bushing would be to invalidate the original analytical assumptions used in the piping analysis, potentially creating an overstress condition in the piping or overloading the supports. This would be more significant for the seismic event since the gap would change the dynamic characteristics of the system and lead to impact loads that could damage the piping or supports.

The corrective actions taken by licensees have been to replace the defective struts or to "stake" the loose bushing in place. However, some of the staked bushings subsequently became loose and had to be reworked. Another potential corrective action would be to shim the clamps where the potential for complete disengagement of the assembly from the bushing is possible. This method would prevent total disengagement even if the bushing became loose. If shims are used, consideration should be given to preventing any interference with required rotation of the assembly.

Recommended Actions for Holders of Operating Licenses or Construction Permits:

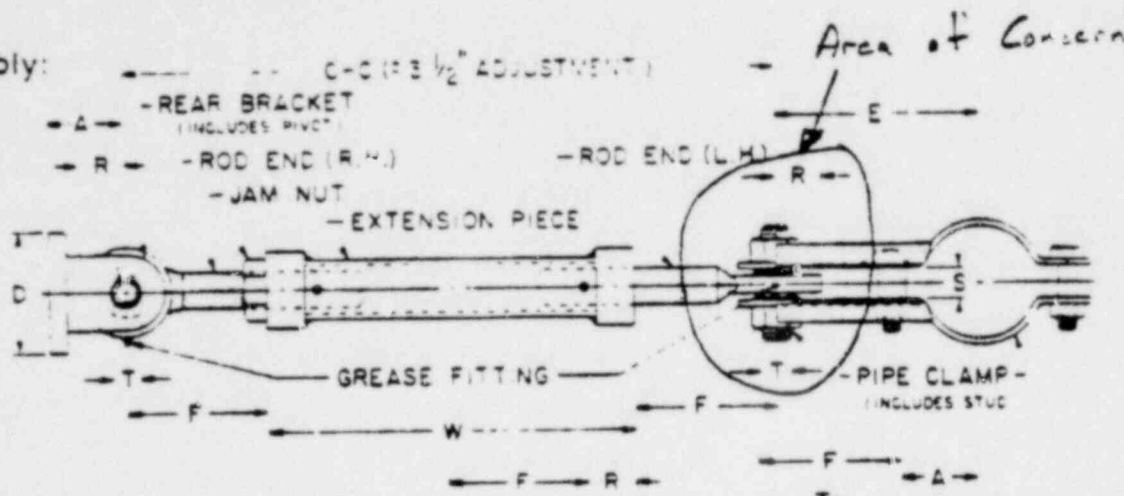
1. Determine whether your facility uses pipe strut or snubber assemblies using bushings that could potentially become loose.
2. Identify from design drawings or field inspections those supports using the strut or snubber assemblies identified in item 1 above where sufficient gap exists in the clamp attachment for complete disengagement of the bushing and the assembly.
3. Inspect where practical the snubber or strut assemblies identified in item 2 above to determine if any bushings are loose or disengaged. If a large number of supports are involved in this inspection, a statistical sampling may be appropriate to determine if your facility has a problem with loose or disengaged bushings.
4. If loose or disengaged bushings are found at your facility, take appropriate corrective actions to ensure that complete disengagement of the assembly from the bushing cannot occur.

No written response to this circular is required. If you need additional information with regard to this subject, please contact the Director of the appropriate NRC Regional Office.

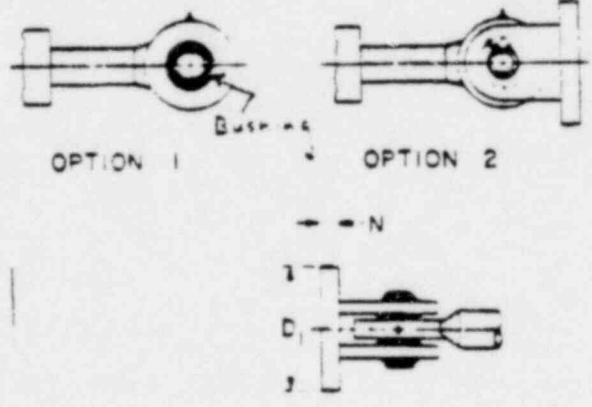
Attachments:

1. Sway Strut Assembly: Figure 211
2. Recently issued IE Circulars

sway strut assembly:  
 fig. 211



Note: The concern involves the case where the dimension S is large enough to allow the assembly to slide completely over the bushing prior to contacting the side of the clamp.



POOR ORIGINAL

RECENTLY ISSUED  
IE CIRCULARS

Circular No.	Subject	Date of Issue	Issued to
81-04	The Role of Shift Technical Advisors and Importance of Licensee Event Reports	4/1/81	All power reactor facilities with an OL or near-term OL
81-03	Inoperable Seismic Monitoring Instrumentation	3/2/81	All power reactor facilities with an OL or CP
81-02	Performance of NRC-Licensed Individuals While on Duty	2/9/81	All power reactor facilities (research & test) with an OL or CP
81-01	Design Problems Involving Indicating Pushbutton Switches Manufactured by Honeywell Incorporated	1/23/81	All power reactor facilities with an OL or CP
80-25	Case Histories of Radiography Events	12/5/80	All radiography licensees
80-24	AECL Teletherapy Unit Malfunction	12/2/80	All teletherapy licensees
80-23	Potential Defects in Beloit Power Systems Emergency Generators	10/31/80	All power reactor facilities with OL or a CP
80-22	Confirmation of Employee Qualifications	10/2/80	All holders of a power reactor OL or CP architect-engineering companies and nuclear steam system suppliers
80-21	Regulation of Refueling Crews	9/10/80	All holders of a power reactor OL or CP
80-20	Changes in Safe-Slab Tank Dimensions	8/21/80	All Part 50 and Part 70 fuel facility licensees

OL = Operating Licenses  
CP = Construction Permit