



UNITED STATES
NUCLEAR REGULATORY COMMISSION
REGION II
101 MARIETTA ST., N.W., SUITE 3100
ATLANTA, GEORGIA 30303

MAR 31 1981



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Gentlemen:

The enclosed circular is forwarded for your information. No written response to this circular is required. If you have any questions related to this matter, please contact this office.

Sincerely,

James P. O'Reilly
Director

Enclosures:

1. IE Circular No. 81-05
2. List of Recently Issued IE Circulars

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March 31, 1981

Addresses

In Reference To

- | | |
|---|---|
| <p>1. Alabama Power Company
 Attn: R. P. McDonald
 Vice President-Nuclear Generation
 Post Office Box 2641
 Birmingham, AL 35291</p> | <p>50-348 Farley Unit 1
 50-364 Farley Unit 2</p> |
| <p>2. Carolina Power and Light Company
 Attn: J. A. Jones
 Senior Executive Vice President
 and Chief Operating Officer
 417 Fayetteville Street
 Raleigh, NC 27602</p> | <p>50-325 Brunswick Unit 1
 50-324 Brunswick Unit 2
 50-400 Harris Unit 1
 50-401 Harris Unit 2
 50-402 Harris Unit 3
 50-403 Harris Unit 4
 50-261 Robinson Unit 2</p> |
| <p>3. Duke Power Company
 Attn: L. S. Daif, Vice President
 Design Engineering
 P. O. Box 33189
 Charlotte, NC 28242</p> | <p>50-491 Cherokee Unit 1
 50-492 Cherokee Unit 2
 50-493 Cherokee Unit 3
 50-488 Perkins Unit 1
 50-489 Perkins Unit 2
 50-490 Perkins Unit 3</p> |
| <p>4. Duke Power Company
 Attn: W. O. Parker, Jr.
 Vice President, Steam Production
 P. O. Box 2178
 Charlotte, NC 28242</p> | <p>50-369 McGuire Unit 1
 50-370 McGuire Unit 2
 50-269 Oconee Unit 1
 50-270 Oconee Unit 2
 50-287 Oconee Unit 3
 50-413 Catawba Unit 1
 50-414 Catawba Unit 2</p> |
| <p>5. Florida Power and Light Company
 Attn: R. E. Uhrig, Vice President
 Advanced Systems and Technology
 P. O. Box 529100
 Miami, FL 33152</p> | <p>50-335 St. Lucie Unit 1
 50-389 St. Lucie Unit 2
 50-250 Turkey Point Unit 3
 50-251 Turkey Point Unit 4</p> |
| <p>6. Florida Power Corporation
 Attn: J. A. Hancock, Assistant
 Vice President Nuclear Operations
 P. O. Box 14042, Mail Stop C-4
 St. Petersburg, FL 33733</p> | <p>50-302 Crystal River Unit 3</p> |

Addresses

In Reference To

- | | |
|---|--|
| 7. Georgia Power Company
Attn: J. H. Miller, Jr.
Executive Vice President
270 Peachtree Street
Atlanta, GA 30303 | 50-321 Hatch Unit 1
50-366 Hatch Unit 2
50-424 Vogtle Unit 1
50-425 Vogtle Unit 2 |
| 8. Mississippi Power and Light Company
Attn: N. L. Stampley
Vice President of Production
P. O. Box 1640
Jackson, MS 39205 | 50-416 Grand Gulf Unit 1
50-417 Grand Gulf Unit 2 |
| 9. Offshore Power Systems
Attn: A. R. Collier, President
P. O. Box 8000
Jacksonville, FL 32211 | 50-437 FNP 1-8 |
| 10. South Carolina Electric and Gas Company
Attn: T. C. Nichols, Jr., Vice President
Power Production and System
Operations
P. O. Box 764
Columbia, SC 29218 | 50-395 Summer Unit 1 |
| 11. Tennessee Valley Authority
Attn: H. G. Parris
Manager of Power
500A Chestnut Street Tower II
Chattanooga, TN 37401 | 50-438 Bellefonte Unit 1
50-439 Bellefonte Unit 2
50-259 Browns Ferry Unit 1
50-260 Browns Ferry Unit 2
50-296 Browns Ferry Unit 3
50-518 Hartsville Unit 1
50-519 Hartsville Unit 2
50-520 Hartsville Unit 3
50-521 Hartsville Unit 4
50-553 Phipps Bend Unit 1
50-554 Phipps Bend Unit 2
50-327 Sequoyah Unit 1
50-328 Sequoyah Unit 2
50-390 Watts Bar Unit 1
50-391 Watts Bar Unit 2
50-566 Yellow Creek Unit 1
50-567 Yellow Creek Unit 2 |
| 12. Virginia Electric and Power Company
Attn: J. H. Ferguson
Executive Vice President-Power
P. O. Box 26666
Richmond, VA 23261 | 50-338 North Anna Unit 1
50-339 North Anna Unit 2
50-404 North Anna Unit 3
50-280 Surry Unit 1
50-281 Surry Unit 2 |

Addresses

In Reference To

13. Institute of Nuclear Power Operation
Attn: R. W. Pack
Lakeside Complex
1820 Waterplace
Atlanta, GA 30339
14. Southern Company Services, Inc.
ATTN: O. Batum, Manager
Nuclear Safety & Licensing
Department
P. O. Box 2625
Birmingham, AL 35202
15. Department of Energy
Clinch River Breeder Reactor
Plant Project Office
ATTN: Chief, Quality Improvement
P. O. Box 11
Oak Ridge, TN 37830
16. EDS, Nuclear, Inc.
ATTN: E. H. Verdery
330 Technology Park/Atlanta
Norcross, GA 30092

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 padule 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:

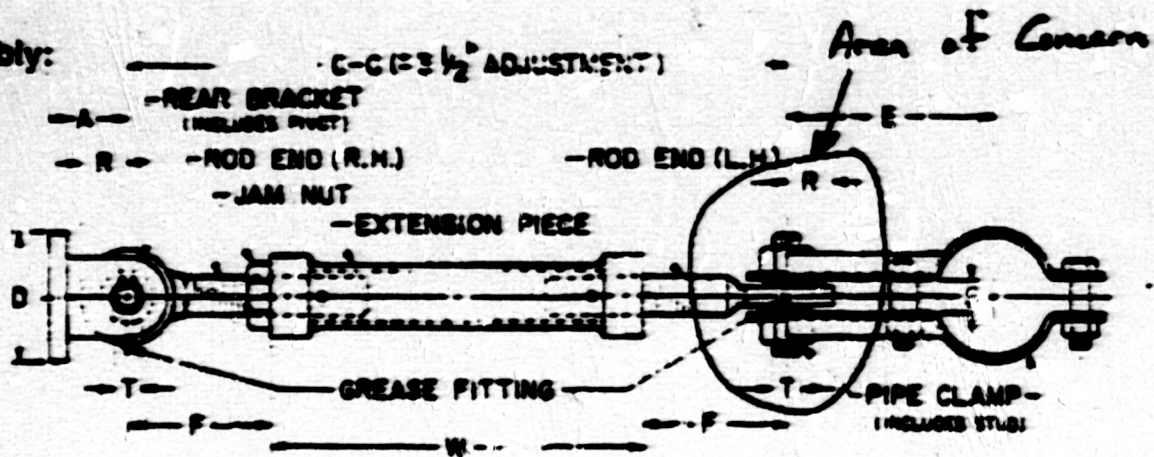
1. Determine whether your facility uses pipe strut or snubber assemblies using bushings that could potentially become loose.
2. Identify from design drawings or field inspections those supports using the strut or snubber assemblies identified in item 1 above where sufficient gap exists in the clamp attachment 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.

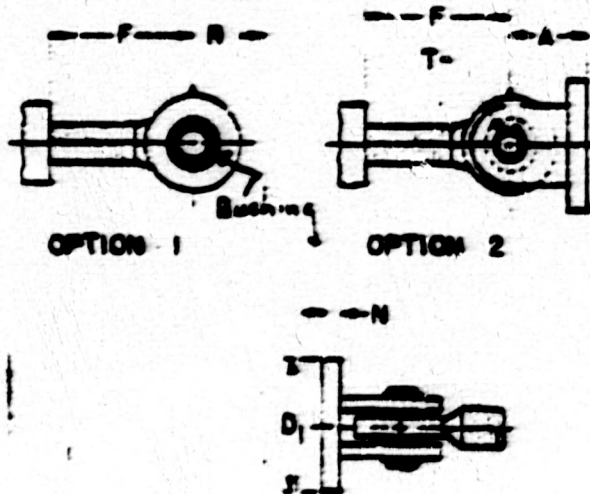
Attachments:

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

Strut assembly:
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 controlling the side of the clamp.



POOR ORIGINAL

RECENTLY ISSUED
IE CIRCULARS

Circular No.	Subject	Date of Issue	Issued to
8104	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
8103	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