



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



Gentlemen:

The enclosed information notice provides early notification of test results that may have safety significance. It is expected that recipients will review the information notice for possible applicability to their facilities.

If you have any questions regarding this matter, please contact this office.

Sincerely,


James P. O'Reilly
Regional Administrator

Enclosure:
IE Information Notice No. 82-03

Distribution for IE Information Notice 82-03

(INFORMATION)

March 4, 1982

Addresses

In Reference To

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

Addresses

In Reference To

- | | |
|---|--|
| 7. Georgia Power Company
Attn: J. H. Miller, Jr.
Executive Vice President
P. O. Box 4545
Atlanta, GA 30302 | 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: R. H. Leasburg
Vice President Nuclear Operations
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 U
Oak Ridge, TN 37830
16. EDS, Nuclear, Inc.
ATTN: E. H. Verdery
330 Technology Park/Atlanta
Norcross, GA 30092

SSINS: 6835
Accession No.:
8202040111
IN 82-03

UNITED STATES
NUCLEAR REGULATORY COMMISSION
OFFICE OF INSPECTION AND ENFORCEMENT
WASHINGTON, DC 20555

March 4, 1982

IE INFORMATION NOTICE NO. 82-03: ENVIRONMENTAL TESTS OF ELECTRICAL TERMINAL
BLOCKS

Discussion:

This information notice pertains to the results of NRC sponsored research conducted on electrical terminal blocks (type CF-1518 and CR 29605 General Electric and type FWM States). These may be typical of those utilized in many nuclear power plants. The research program was conducted at Sandia Laboratories in Albuquerque, NM and consisted of approximately 600 individual tests made on enclosed and open terminal blocks of the type used at TMI-2. The terminal blocks were subjected to 100% humidity conditions at 186°F which were the conditions experienced by some terminal blocks during the TMI-2 accident. (Note: To date, there has been no evidence of terminal block failure at TMI-2 during the TMI-2 accident or after). No tests at other LOCA conditions were conducted. Terminal block performance under the test conditions was measured by monitoring electrical terminal to ground leakage current with terminal to ground voltages of 120, 240 and 480 volts. Some terminal blocks were installed in metal enclosures with a 6 mm pressure relief hole. These metal enclosures were mounted in a horizontal plane during the tests. Some tests were made by simulating chemical spray and various contaminants that may be found on terminal blocks and could result in electrolytic leakage paths in nuclear power plants. The results of these tests indicated instances of leakage currents when blocks were directly exposed to chemicals and steam.

The NRC recognizes that the use of properly designed terminal blocks inside containment is an option of the applicant. NRC requires qualification of all electrical connections, cable splices as well as terminal blocks, for accident conditions.

It is recognized that cleanliness of terminations and terminal blocks in circuits important to safety is of concern to designers, constructors, and licensees. The cleanliness aspects are addressed in Appendix B of 10 CFR 50. These regulations require the licensee to establish appropriate procedures based upon manufacturer's and constructor's recommendations, operating experience, and specific component characteristics to assure that equipment is stored, installed, and maintained in an acceptable state. To this end, IEEE-336, ANS 3.2, and ANSI 45.2.3 Standards and NRC Regulatory Guide 1.39 are being used by designers, constructors, and operators of power plants which address the installation, cleanliness, and on-going maintenance of Class 1E electrical components, including terminal blocks.

IN 82-03
March 4, 1982
Page 2 of 2

In view of the above, licensees are reminded that the plant preventive maintenance program in use at their facilities should assure (1) proper operation of all essential components is achieved throughout the life of the plant; and (2) that periodic inspection of those terminations and terminal blocks for cleanliness and installation integrity is performed following any maintenance activity affecting them.

The Office of Inspection and Enforcement has general inspection procedures which are used by inspectors to monitor compliance with the above Standards, Guides, and recommendations. Terminal blocks are specifically identified as an example of a component which must be inspected for cleanliness during construction of the power plant.

No specific action or response is required at this time. If you have any questions regarding this matter, please contact the Regional Administrator of the appropriate NRC Regional Office.

Attachment:
Recently issued IE Information Notices

Attachment
IN 82-03
March 4, 1982

RECENTLY ISSUED
IE INFORMATION NOTICES

Information Notice No.	Subject	Date of Issue	Issued to
82-01 Rev. 1	Auxiliary Feedwater Pump Lockout Resulting from Westinghouse W-2 Switch Circuitry Modification	02/26/82	All power reactor facilities holding an OL or CP
80-32 Rev. 1	Clarification of Certain Requirements for Exclusive-Use Shipments of Radioactive Materials	02/26/82	All facility, materials and Part 50 licensees
82-02	Westinghouse Nbfd Relay Failures in Reactor Protection Systems at Certain Nuclear Power Plants	01/27/82	All power reactor facilities holding an OL or CP
82-01	Auxiliary Feedwater Pump Lockout Resulting from Westinghouse W-2 Switch Circuit Modification	01/22/82	All power reactor facilities holding an OL or CP
81-39	EPA Crosscheck Program - Low Level Radioiodine in Water Test Program	12/23/81	All power reactor facilities holding an OL or CP
81-38	Potentially Significant Equipment Failures Resulting from Contamination of Air-Operated Systems	12/16/81	All power reactor facilities holding an OL or CP
81-37	Unnecessary Radiation Exposure to the Public and Workers During Events Involving Thickness and Level Measuring Devices	12/15/81	All power reactor facilities holding byproduct material licenses
81-36	Replacement Diaphragms for Robertshaw Valve (Model No. VC-210)	12/3/81	All power reactor facilities holding an OL or CP
81-35	Check Valve Failures	12/2/81	All power reactor facilities holding an OL or CP

OL = Operating License
CP = Construction Permit

ATTACHMENT