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

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APR 17 1980

In Reply Refer To:
RII:JPO
50-491, 50-492
50-493, 50-488
50-489, 50-490

ALL

Duke Power Company
ATTN: L. C. Dail, Vice President
Design Engineering
P. O. Box 33189
Charlotte, NC 28242

Gentlemen:

The enclosed Bulletin 80-09 is forwarded to you for action. A written response is required. If you require additional information regarding this matter, please contact this office.

Sincerely,

James P. O'Reilly
Director

Enclosures:
1. IE Bulletin No. 80-09
2. List of IE Bulletins
Recently Issued

cc w/encl:
J. T. Moore, Project Manager
Post Office Box 422
Gaffney, South Carolina 29340

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

SSINS No. 6820
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DUPLICATE

April 17, 1980

IE Bulletin No. 80-09

HYDRAMOTOR ACTUATOR DEFICIENCIES

ITT General Controls (ITT-GC) reported to the NRC two (2) problem areas pertaining to their Models AH-90 and NH-90 Series Hydramotor Actuators. The NH-90 designators depicts nuclear class 1E design. Either of the problems reported could affect the operation of safety related equipment installed in nuclear power facilities:

A. On December 7, 1979, ITT-GC reported the use of springs having incorrect material installed in Models AH-90 and NH-90 Series Hydramotor Actuators. Instead of 5160 steel, type 1060-1070 steel was used for the No. 1 springs in the actuators. The incorrect spring material does not meet the design strength and upon actuation of greater than 3 inches stroke, a permanent set occurs resulting in a decreased force output of up to 160 lbs, depending on spring combinations used and specific adjustments made to the actuators. About 368 defective springs were used between September 1975 and January 1978.

B. On February 5, 1980, ITT-GC reported that the ITT-GC "Selection Nomograph" for AH-90 and NH-90 series hydramotor actuators represent the actual spring or hydraulic forces only and do not include the effects of friction or residual hydraulic forces. It has been determined that the actuators can have about 100 lbs. of friction and an additional 40 lbs. of residual hydraulic pressure. Use of these nomographs may result in selection of actuators undersized for the use intended.

C. Action to be taken by licensees and construction permit holders

1. Each licensee and each holder of a construction permit should determine whether any safety-related system or component in the facility uses an AH-90 or NH-90 series Hydramotor Actuator manufactured by ITT General Controls. (Note: To assist in this determination a listing of customers that have purchased said actuators and the number of actuators purchased is appended hereto as Attachment No. 1. Since some of the Original Equipment Manufacturers (OEM's) may delete the identity of components used in their product, it may be necessary to consult with the OEM to make the required determination.)

2. Operating facilities using said actuators in safety-related systems should:

a. Review system functional testing to determining that equipment using the subject actuators are periodically tested.

b. Examine test records to determine whether the functional test results conform to system requirements;

c. Verify that ample margin exists with respect to thrust delivered to the load for long term operation considering improper spring material and methods used to select the actuator for a particular application.

d. Take any corrective actions required by the results of items a. b. and c., above.

3. Facilities with construction permits using said actuators in safety-related systems should:

a. Reevaluate actuator size selection in light of the possibility of using actuators with defective springs or which were sized by the "Selection Nomograph" without accounting for internal friction and hydraulic resistance. Said reevaluation should assure that the actuators will perform their intended function.

b. Modify equipment qualification, preoperational and startup test programs, as necessary, to demonstrate the functional adequacy of the Hydramotor Actuator in light of the aforementioned concerns. Particular attention should be given to the possibility of defective springs taking a permanent set.

Note: ITT General Controls is presently performing actuator testing on units supplied by one of their customers (American Warming & Ventilating Co. Inc.) and revising the methods used to select actuator application.

Each licensee or holder of a construction permit should report to the NRC within 60 days of the results of actions taken, any corrective actions required, and the date when corrective actions were or will be completed. The report should be addressed to:

U. S. Nuclear Regulatory Commission
Director of Reactor Construction Inspection, O.I.E.
Washington, D.C. 20555

with a copy to the Regional Office.

Approved by GAO, B180225 (R0072); clearance expires 7/31/80. Approval was given under a blanket clearance specifically for identified generic problems.

Attachment No. 1

Customers	Quantities
ACDC Inc, Cincinnati, OH	27
American Warming & Ventilating Co., Inc. Maumee, OH	145
Copes Vulcan, Inc. Lake City, PA	2
Fisher Controls Co., Inc. Marshalltown, IA	38
Fisher Controls Co., Inc. Corapolis, PA	4
General Signal Corporation West Warwick, RI	2
ITT [illegible]-Dahl Warwick, RI	4
Joy Manufacturing New Philadelphia, OH	18
Masoneilan International, Inc. Norwood, MA	10
Pacific Air Products Santa Ana, CA	16
Posi Seal International, Inc. No. Stonington, CT	14
Powers Regulator Co. Portland, OR	1
Powers Regulator Co. Skokie, IL	74
Ruskin Manufacturing Co. Grandview, MO	4
Valtek, Inc. Springville, UT	9
TOTAL	368

IE Bulletin No. 80-09
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Enclosure

RECENTLY ISSUED
IE BULLETINS

Bulletin No.	Subject	Date Issued	Issued To
80-09	Hydramotor Actuator Deficiencies	4/17/80	All power reactors with a CP or OL
80-08	Examination of Containment Liner Penetration Welds	4/7/80	All power reactors with a CP and/or OL no later than 4/7/80
80-07	BWR Jet Pump Assembly Failure	4/4/80	All GE BWR-3 and BWR-4 facilities with an OL
80-06	Engineered Safety Feature (ESF) Reset Controls	3/13/80	All power reactor facilities with an OL
80-05	Vacuum Condition Resulting In Damage To Chemical Volume Control System (CVCS) Holdup Tanks	3/10/80	All PWR power reactor facilities holding OLs and to those with a CP
80-04	Analysis of a PWR Main Steam Line Break With Continued Feedwater Addition	2/8/80	All PWR reactor facilities holding OLs and to those nearing licensing
80-03	Loss of Charcoal From Standard Type II, 2 Inch, Tray Adsorber Cells	2/6/80	All holders of Power Reactor OLs and CPs
80-02	Inadequate Quality Assurance for Nuclear Supplied Equipment	1/21/80	All BWR licenses with a CP or OL
80-01	Operability of ADS Valve Pneumatic Supply	1/11/80	All BWR power reactor facilities with and OL
79-01B	Environmental Qualification of Class IE Equipment	1/14/80	All power reactor facilities with an OL
79-28	Possible Malfunction of Namco Model EA 180 Limit Switches at Elevated Temperatures	12/7/79	All power reactor facilities with an OL or a CP