CREATORS OF ELECTRICAL
POWER SUPPLY SYSTEMS

POWER SYSTEMS
A MORRISON-KNUDSEN DIVISION

101 GELO ROAD / POST OFFICE BOX 1928
ROCKY MOUNT, NORTH CAROLINA 27801
PHONE: (919) 977-2720 / TWX: (510) 929-0725
TELEX 802507 PSD-RYMO

USNRC REGION II
ATLANTA, GEORGIA
82 MAY 24 P12:10

May 19, 1982

Nuclear Regulatory Commission
Region II Office
101 Marietta St., N.W.
Suite 3100
Atlanta, GA 30333

Attention: J.D. O'Reilly, Regional Director

Reference: Possible Reportable Defect 10CFR21
Component: Robertshaw Controls Company
Temperature Control Valve Models 1284 & 1825
Size 5" & 6"

Dear Sir:

Attached is a copy of a letter from the Robertshaw Controls Company dated May 13, 1982. The nut referred to is shown on the attached partial drawing N84984-F3.

We have furnished only one valve for nuclear service and have notified the owner to inspect the valve and verify to Power Systems Division the result of the inspection. The installation in which this valve is installed has not as yet been placed into service.

We have reviewed the reported defect and have determined that the emergency diesel engine on which this valve is installed could perform its safety function because the valve would fail in the "safe" direction. Therefore, in our case, the defect is not considered reportable. Power Systems will, however, verify that any corrective action required is completed.

Since we are not aware of other applications and the effect of these installations, we considered it to be prudent to notify you of this potential defect.

Very truly yours,

POWER SYSTEMS
A MORRISON-KNUDSEN DIVISION

Harry W. Falter, P.E.
Division Engineer

HWF/voa

Attachments

OFFICIAL COPY

8206010570 S

IE 19
S1/1

cc: B. Pennington, H. Falter, H. Loewe, P. King, M. Cake, T. Fryar, E. Martin, J. Barnes, File

Robertshaw

ROBERTSHAW CONTROLS COMPANY

FULTON SYLPHON DIVISION

2318 KINGSTON PIKE, S.W.
P.O. BOX 400 • KNOXVILLE, TENNESSEE 37901

AREA CODE 615 • TELEPHONE 546-0550 • TWX 810 - 583 - 0143

Revised 5-18-82

May 13, 1982

RECEIVED
MAY 17 1982
POWER SYSTEMS DIVISION
MORRISON-KNUDSEN CO., INC.

Power Systems Division
A Morrison Knudsen Division
P. O. Box 1928
Rocky Mount, North Carolina 27801

Attention: Mr. Henry Williams
Purchasing Agent

Gentlemen:

This letter is to inform you of an incident involving a Robertshaw thermostatic valve supplied for use at a nuclear power plant. This information should be evaluated by the criteria set forth in Title 10 of the Code of Federal Regulations Part 21 (10CFR21).

Robertshaw Models 1284 and 1825 in the 5" and 6" sizes incorporate a lower overrun assembly which absorbs movement generated by the thermal assemblies under certain conditions. The overrun assembly consists of a spring restrained between two end pieces whose length and "breakdown" is set by an axial bolt and nut. Under normal conditions, this assembly acts as a rigid member. Should the nut not be firmly affixed in place and "backoff" the longer length of the overrun assembly results in valve stroke which is not generated by the thermal assembly. This additional stroke makes the thermal assembly control at a lower temperature, thus, over cooling the system.

In the Fall of 1977, it was reported to us that the nut had completely "backed off" in one valve intended for nuclear service. This allowed the valve to go into the full cooling position. At that time the design of the overrun assembly called for the nut to be staked in place. The design was revised to require soldering the nut to the bolt. No further reports were received of any difficulty.

In mid-April of this year, the Chief Project Engineer responsible for the design of these thermostatic valves visited the Virgil C. Summer Nuclear Station to aid in the investigation of over cooling of the engines used in the Stand-By Diesel Generators. Plant personnel reported to him that when the valves were opened for inspection at an earlier date, one valve had the nut missing from the lower overrun assembly. This group of valves had been supplied prior to the described design revision. It was determined that improper overrun assemblies were not responsible for the engine over cooling at this site.

Our investigation following the report from the Virgil Summer site disclosed that the design change made in 1977 was a "USE" change, i.e., completed overrun assemblies and completed thermostatic valve assemblies were "used" before the design change was implemented. These overrun assemblies are also used in commercial valves, and it is impossible to determine how many, if any, assemblies with the staked construction were supplied to nuclear power plant after the design change was made.

In our investigation, we also discovered that at least one lot of overrun assemblies for the 5" size valves had been placed in our stock without solder locking the nut in place. Again, since this is also used in commercial valves, we cannot determine if any of this group was actually supplied to you for use at a nuclear power plant site.

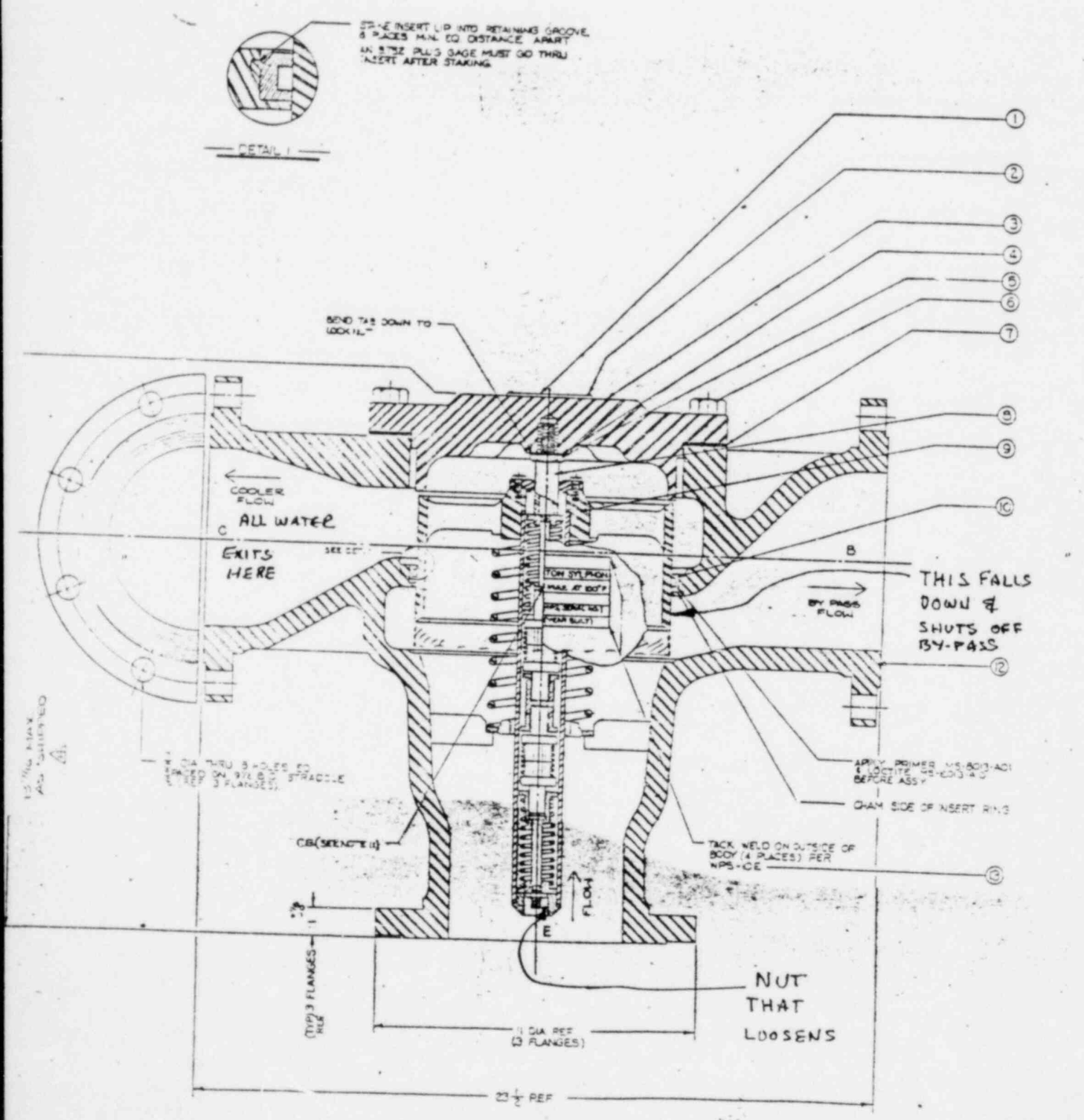
In our judgement, this type of failure does not constitute substantial safety hazard; however, we cannot adequately evaluate the effect of over cooling in your application for these valves. Therefore, as required by 10CFR21, we request that you evaluate this information considering your application.

Yours very truly,

ROBERTSHAW CONTROLS COMPANY
Fulton Sylphon Division

T. T. Howell
Quality Manager

TTH:g
cc: Mr. I. O. Johnson
Mr. J. A. Howell, Jr.
Mr. J. P. Morgan


STAKE INSERT LIP INTO RETAINING GROOVE 6 PLACES MIN EQ DISTANCE APART
MIN .375Z PULL GAGE MUST GO THRU INSERT AFTER STAKING
DETAIL 1
BEND TAB DOWN TO LOCK IN
COOLER FLOW
ALL WATER EXITS HERE
BY PASS FLOW
THIS FALLS DOWN & SHUTS OFF BY-PASS
APPLY PRIMER MS-8013-AC1 (LOCTITE 75-8013 A-C) BEFORE ASSY
CHAM SIDE OF INSERT RING
TACK WELD ON OUTSIDE OF BODY (4 PLACES) PER NPS-IOE
FLOW
NUT THAT LOOSENS
(TYP) 3 FLANGES
DIA REF (3 FLANGES)
23 1/2 REF