



1993 November 25

United States Regulatory Commission
Washington DC
USA 2055
Mail Stop 5H6

**Service Bulletin IND-93-2
Source Down Detector Switch (Pool Type)**

Dear Sir/Madam:

This is to advise you of a recent failure of the Pool Type Source Down Switch in a wet storage irradiator facility.

The Pool Type Source Down Switch failed to provide the required signal when the source was fully down in the safe position. The failure was found to be due to green corrosion deposits on the metal plunger of the switch actuator assembly. The deposits caused the plunger to stick in the retracted position and prevented it from springing back to the source down position when the actuating lever indicated that the source was down.

The switch failure resulted in the machine stopping in a safe condition. Access to the radiation room is denied until a source down signal is obtained. The correct procedure in this event is to call Nordion International Inc. for instructions on gaining access so that the problem can be corrected.

Nordion will be sending you a replacement switch actuator made from corrosion resistant materials together with instructions for the replacement. We expect to be able to ship these by the end of December 1993.

In the meantime we ask you to inspect your switch. If you see evidence of corrosion, remove the switch actuator and have it cleaned free of corrosion before having it reinstalled and continuing normal service.

If you have any questions regarding this information, please do not hesitate to call me.

Yours sincerely,

A handwritten signature in dark ink, appearing to read "R.G. McKinnon".

R.G. McKinnon
Chief Engineer

ROMSYPHILLTEL

9501030167 941228
PDR I&E
NOTICE94-089 PDR

1994 June 21

**SERVICE BULLETIN IND-94-1
IRRADIATORS WITH NORGREN SOURCE VALVES**

Dear Sir/Madam:

This Service Bulletin is being used to advise you of a source hoist pneumatic valve failure. Although there was no substantial risk of injury in this event, it is Nordion policy in the interest of safety and reliability of our products to recommend and implement where possible the necessary corrective action.

During a normal shut down of an irradiator, the source failed to return to the storage position and only returned after the air supply line to the source hoist was disconnected. The valve was a Norgren model K71EA00-KS1-AECKG1.

Evaluation showed that this valve requires a spool which would always be open to exhaust should it jam in any intermediate position. The failed valve had a standard spool which blocked all ports when it jammed in an intermediate position thereby preventing the source from going down.

The action required to prevent this occurrence is to remove the standard spool (Norgren Part No: 54237-56) from the valve and replace it with a new spool (Norgren Part No. 54237-58) that will allow air to exhaust if it jams in any intermediate position.

You will find the replacement spools enclosed. To install these parts please follow the instructions provided, fill out the enclosed inspection form and return it to Nordion in the envelope provided.

Yours sincerely,



R.G. McKinnon
Chief Engineer
Quality Assurance Department



DECLARATION OF ORIGIN AND VALUE

TO (CONSIGNEE):

DESCRIPTION OF GOODS	UNIT QUANTITY
Norgren Spools (Part No. 54237-58)	

COMMERCIAL VALUE: \$30.00 Cdn.

COUNTRY OF ORIGIN: United States of America

CHARGE POINT #: NR200K00

SIGNATURE: _____
Graham Rose

DATE: 1994 June 23

NORGREN NUGGET 200 SERIES SOURCE HOIST VALVE, SPOOL REPLACEMENT INSTRUCTIONS

June 22, 1994

This document pertains to the modification of Norgren valves with a part number K71EA00-KS1 AECKG1 in source hoist use. The modification details the replacement of the old norgren part number 54237-56 spool, with a norgren part number 54237-58 spool supplied in this kit. The spool replacement kit contains;

- 1- One new spool (Norgren part number 54237-58) and one spool number label, for each source hoist valve in your source hoist pneumatic assembly(ies).
- 2- A Nordion service bulletin regarding the source hoist valve spools, this instruction sheet/packing list, the Norgren valve inspection form and a return shipping label.

If any of these items are missing, please call Nordion at 1 800 465 3666 from the United States, or (613) 592 2790 from elsewhere in the world and ask for Graham Rose in Irradiator Engineering or the Installation and Service department.

NOTE:

Read the service bulletin and all instructions before starting the spool replacement.

Spool Replacement Procedure

- 1- Shut down the irradiator.
- 2- Enter the personnel access and disconnect the air supply to the source hoist valve panel (disconnect the chain across the personnel access corridor).
- 3- Close the personnel access door and take the machine key with you to the source hoist valve panel. This will prevent inadvertent machine startup.

Note: Steps 4 through 7 must be performed for each source hoist valve in the source hoist pneumatic assembly(ies).

4- Remove the solenoid valve operator from the end of the valve (two (2) phillips screws). Be careful to; note the orientation of the solenoid operator, and insure you do not loose the small O-ring and plug which are between the valve body and operator.

5- Remove the spool from the valve body.

6- Grease the new spool using the grease in the package and install the spool. Spool orientation is not important.

7- Replace the solenoid valve operator, noting the observations made in step 4.

8- Repeat steps 4 to 7 on all source hoist valves.

Test Procedure

1- After the spool replacements are complete, start the machine using the normal startup procedure. Raise all source racks.

2- Confirm that all source racks were raised.

3- Shut down the machine and confirm all source racks return to the fully shielded position.

4- Start the machine again, using the normal startup procedure.

5- At the source hoist valve panel, remove the electrical coil connector from one of the source hoist valves. The rack should return to the fully shielded position.

6- Re-install the coil connector and repeat steps 4 to 6 for remaining source hoist valves.

Old Spools

Please return the old spools which were removed from the source hoist valves with the valve inspection form in the shipping envelope, to Nordion for analysis.

Validation

The 54237-58 spool has been tested in a K71EA00 KS1 AECKG1 valve. All flow paths and spool movement failure modes were tested. The valve performed correctly.

If any difficulties or questions arise, please call Nordion at 1 800 465 3666 from the United States or (613) 592 2790 from elsewhere in the world, and ask for the Installation and Service department.

Sincerely

Graham Rose
Project Engineer

Norgren valve inspection form

Did the system pass the test procedure _____ Date _____

Approximately how old are the spools _____

How old are the valve bodies _____

Approximately what was the valve rebuild interval _____

Was lubricated air used in the valves _____

How easily was the spool removed (ie. slid out, notchy, difficult) _____

Approximate number of source movements per day (0.1,1,10,50) _____

Have any symptoms of a possible valve failure been noticed in the past _____

This record of spool change will go on the unit history file for each irradiator at Nordion for future reference. The valve data will be used to determine if any further action needs to be taken regarding the Norgren K71EA00 KS1 AECKG1 source hoist valves.

Spools were changed and labels affixed by _____ Date _____

I thank you in advance for your input. Anyone who would like results of this survey may call Graham Rose at Nordion at 1 800 465 3666 from the United States or (613) 592 3400 Ext. # 2545 from elsewhere in the world. Please allow 4 to 6 weeks after you receive this to allow for response return and post processing.

**LIST OF RECENTLY ISSUED
 NMSS INFORMATION NOTICES**

Information Notice No.	Subject	Date of Issuance	Issued to
89-25, Rev. 1	Unauthorized Transfer of Ownership or Control of Licensed Activities	12/07/94	All fuel cycle and material licensees.
94-81	Accuracy of Bioassay and Environmental Sampling Results	11/25/94	All U.S. Nuclear Regulatory Commission licensees.
93-60, Supp. 1	Reporting Fuel Cycle and Materials Events to the NRC Operations Center	10/20/94	All 10 CFR Part 70 fuel cycle licensees.
94-74	Facility Management Responsibilities for Purchased or Contracted Services for Radiation Therapy Programs	10/13/94	All U.S. Nuclear Regulatory Commission Medical Licensees.
94-73	Clarification of Criticality Reporting Criteria	10/12/94	All fuel fabrication facilities.
94-70	Issues Associated with Use of Strontium-89 and Other Beta Emitting Radiopharmaceuticals	09/29/94	All U.S. Nuclear Regulatory Commission Medical Licensees.
94-65	Potential Errors in Manual Brachytherapy Dose Calculations Generated Using a Computerized Treatment Planning System	09/12/94	All U.S. Nuclear Regulatory Commission medical licensees.
94-64	Reactivity Insertion Transient and Accident Limits for High Burnup Fuel	08/31/94	All holders of OLs or CPs for nuclear power reactors and all fuel fabrication licensees.

**LIST OF RECENTLY ISSUED
 NRC INFORMATION NOTICES**

Information Notice No.	Subject	Date of Issuance	Issued to
94-88	Inservice Inspection Deficiencies Result in Severely Degraded Steam Generator Tubes	12/23/94	All holders of OLs or CPs for pressurized water reactors.
94-87	Unanticipated Crack in a Particular Heat of Alloy 600 Used for Westinghouse Mechanical Plugs for Steam Generator Tubes	12/22/94	All holders of OLs or CPs for nuclear power reactors.
94-86	Legal Actions Against Thermal Science, Inc., Manufacturer of Thermo-Lag	12/22/94	All holders of OLs or CPs for nuclear power reactors.
94-85	Problems with the Latching Mechanism in Potter and Brumfield R10-E3286-2 Relays	12/21/94	All holders of OLs or CPs for nuclear power reactors.
94-40, Supp. 1	Failure of a Rod Control Cluster Assembly to Fully Insert Following a Reactor Trip at Braidwood Unit 2	12/15/94	All holders of OLs or CPs for nuclear power reactors.
94-84	Air Entrainment in Terry Turbine Lubricating Oil System	12/02/94	All holders of OLs or CPs for nuclear power reactors.
89-25, Rev. 1	Unauthorized Transfer of Ownership or Control of Licensed Activities	12/07/94	All fuel cycle and material licensees.
94-83	Reactor Trip Followed by Unexpected Events	12/06/94	All holders of OLs or CPs for nuclear power reactors.
94-82	Concerns Regarding Essential Chiller Reliability during Periods of Low Cooling Water Temperature	12/05/94	All holders of OLs or CPs for nuclear power reactors.

OL = Operating License
 CP = Construction Permit