



UNITED STATES
NUCLEAR REGULATORY COMMISSION
WASHINGTON, D. C. 20555

June 6, 1989

ALL AGREEMENT STATES

NORDION (PREVIOUSLY AECL) SERVICE BULLETIN

Enclosed for your information is a service bulletin from Nordion International, Inc. concerning a failure of the source hoist controls of an irradiator facility. The service bulletin specifically addresses irradiator facilities that utilize Martonair solenoid valves to control movement of the source hoist. Nordion has sent the bulletin to all of its relevant customers. We recommend follow-up with any affected licensee during their next inspection.

Kathleen J. Schudy

Vandy L. Miller, Assistant Director *for*
for State Agreements Program
State, Local and Indian Tribe Programs

Enclosure:
As stated

9306070301 930503
PDR COMMS NRCC
CORRESPONDENCE PDR
10 788

1988 November 4

File: IND-088-1

Attention: Radiation Safety Officer

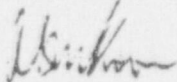
Please find enclosed an important service bulletin IND-088-1 together with the parts and instructions to make changes to the pilot air supply to the source hoist solenoid valves.

If your irradiator does not utilize Martonair solenoid valves to control movement of the source hoist then please treat this bulletin as advice regarding the use of proper lubricants and the need for regular preventative maintenance.

If your irradiator utilizes Martonair solenoid valves to control movement of the source hoist then please make the changes described in the bulletin and return the sign off form to us so we can update our records.

Your prompt attention to this matter would be appreciated.

Yours truly,



R.G. McKinnon,
General Manager,
Irradiator Engineering,
Installation & Service

Encl.

- IMPORTANT -

NORDION SERVICE BULLETIN IND-066-1

This bulletin is to inform you of a recent failure in the source hoist controls of an irradiation facility. Although there was no substantial risk of injury, it is our policy, in the interest of safety and reliability to recommend corrective action.

Please ensure that the recommended action outlined in this bulletin is undertaken.

FACILITIES AFFECTED

All facilities which utilize the Martonaire pilot operated solenoid valves in the source hoist pneumatic circuit.

THE FAILURE

During a normal shut down of the irradiator the source rack failed to return to the storage position. The source was lowered by releasing air pressure at the regulator.

The operator entered the radiation room using the correct procedure, testing the monitor, opening the door and disconnecting the source hoist safety valve chain across the maze.

The air pressure was restored at the pressure regulator and no apparent cause of the problem was found.

When restarting the machine, the operator activated the safety start up time delay keyswitch. When leaving the maze and reconnecting the source hoist safety valve chain the source moving alarm bell indicated that the source was going up. The operator immediately disconnected the safety valve chain and the source rack returned to storage. The problem was traced to a small piece of rubber which completely blocked the pilot air supply to the source hoist solenoid valves and therefore prevented the spools from shifting to the source down position.

An investigation revealed that the rubber blocking the pilot air line was the orifice of the particular check valve used in the pneumatic circuit. The orifice had deteriorated due to the use of a lubricating oil which was not compatible with the rubber material.

In this event there was no danger to personnel because back-up safety systems performed as they were designed to, and correct administrative procedures were followed.

CORRECTIVE ACTION

Replace the Norgren 4LD-010 check valve using the instructions and parts enclosed and reconnect the piping so that each valve has a new check valve (metal ball-spring design) and Bimba air reservoir. This will ensure that each redundant valve has a separate pilot air supply and that one part failure will not compromise the safe operation of the pneumatic circuit.

It is also important to note that only lubricants specified in your manual be used. If these are not available then use non-detergent oil SAE-5 or equivalent in air line lubricators since additives used for cleaning engine parts can be detrimental to rubber or Buna N seal materials used in solenoid valves.

Preventative maintenance procedures must be used as outlined in the operators' manual. Be sure to check and replace seals which show signs of swelling or loss of elastic properties. Neglect of maintenance activities could result in equipment failure or physical injury to operating personnel.

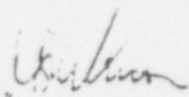
You will find enclosed the parts required to change the pneumatic circuit to a fully redundant safe operation. These parts are:

- A) 2 Martonaire check valves #C520
- B) 2 Bimba air reservoir D 1500-A-1
- C) All fittings required for installation
- D) Pneumatic copper tubing

The drawing enclosed contains all instructions required to rebuild the source hoist pneumatic circuit.

We would appreciate your prompt attention in carrying out the modifications. Please be so good as to inform us when the changes are implemented so as that drawing files may be updated. A return sign off form is included. It would also be prudent to check your conditions of license to ensure you comply with any requirements to advise your Regulatory Authority of any facility modifications.

Yours truly,



R.G. McKinnon
General Manager,
Irradiator Engineering,
Installation & Service

RGM/chh
Encl.

1988 November 4

Instructions for the modification of the source hoist controls, Ref.
AECL dwgs., B120007-001
B115207-003.

These instructions are intended as a guide to assist in the modification of your source hoist controls. Your actual source hoist control may not be identical to the dwgs. referenced in these instructions, however, it will be similar. If your source hoist controls resemble AECL dwg. #B120007-001 Refer to procedure #1 or if they resemble AECL dwg. #B11207-003 Refer to procedure #2.

PROCEDURE #1

Ref. B120007-101

- (1) First reduce the air pressure to zero at the regulator. Cut the airline leading from the lubricator to port A of the source hoist valve about 2 or 3 inches below the right angle bend at the lubricator.
- (2) Disconnect the pilot air line, item #16 at port S2 of both solenoid valves. Remove item #10 from both valves.
- (3) Unsolder the elbow just above the solenoid valve of the air line cut in step #1 and discard this whole assembly.
- (4) Ref. to dwg. #B120007-266 A.
- (5) Complete the plumbing of the 3/8 DD line from the cut in step #1 to the source hoist valve as illustrated.
- (6) Complete the plumbing between items 9 and the S2 ports of the solenoid valves as illustrated, to provide individual check valves & reservoirs for each source hoist solenoid valve. Blow out air lines and make sure they are clear of debris.
- (7) Pre-assemble the two check valves and reservoirs, items #5, 6, 7 & 8 and install.

Note: Be sure the arrow inscribed on the check valves point in the direction illustrated. A pipe sealant should be used on all N.P.T. threads.

PROCEDURE #2

Ref. B115207-003

- (1) First reduce the air pressure to zero at the regulator. Unsolder elbow, item #9 from the 1/4 " dia. tube item #21.

- (2) Disconnect the pilot air line from both solenoid valves at item #19, and discard this assembly.
- (3) Ref. B115207-004.
- (4) Complete the plumbing between the 1/4 dia. tube, item #21 in step 1 of this procedure, and the source hoist solenoid valves as illustrated in drawings B115207-004. Blow out air lines and make sure they are clear of debris.
- (5) Pre-assemble both check valves and reservoirs, item #5, 6, 7 & 8.

Note: Be sure the arrow inscribed on the check valve points in the direction illustrated. A pipe sealant should be used on all N.P.T. threads.

To: R.G. McKinnon, General Manager
Irradiator Engineering,
Installation & Service
Nordion International Inc.
447 March Road
P.O. Box 13500
Kanata, Ontario
K2K 1X8

All modifications to the source hoist pneumatic circuit have been completed as outlined in the instructions contained in service bulletin IND-088-1. Please update your records and drawings to reflect this.

Signed _____

Radiation Safety Officer

Please write Company name and
address here:

