

UNITED STATES
NUCLEAR REGULATORY COMMISSION
OFFICE OF NUCLEAR MATERIAL SAFETY AND SAFEGUARDS
WASHINGTON, D.C. 20555-0001

September 26, 1995

NRC INFORMATION NOTICE 95-44: ENSURING COMPATIBLE USE OF DRIVE CABLES
INCORPORATING INDUSTRIAL NUCLEAR COMPANY
BALL-TYPE MALE CONNECTORS

Addressees

All Radiography Licensees.

Purpose

The U.S. Nuclear Regulatory Commission (NRC) is issuing this information notice to alert addressees to two source disconnects involving Industrial Nuclear Company (INC) ball-type drive cable connectors. It is expected that recipients will review the information for applicability to their facilities and consider actions, as appropriate, to avoid similar problems. However, suggestions contained in this information notice are not new NRC requirements; therefore, no specific action nor written response is required.

Description of Circumstances

An NRC licensee reported that while performing radiographic operations on August 25, 1995, and August 27, 1995, it experienced two source disconnects. The licensee was using a Gulf Nuclear Model 20V radiographic camera, an INC Model 22 radiographic source assembly, and drive cables incorporating INC connectors. Both disconnects occurred as a result of a catastrophic failure of the neck of the male connector on the drive cable. This resulted in the source assembly becoming separated from the drive cable and not being able to be retracted into the camera.

The drive cable involved in the first disconnect had been in use for only a short time (2 to 4 weeks). After the disconnect, the drive cable was replaced with a new, unused drive cable that subsequently failed after being in use for approximately 2 days. Both drive cables incorporated INC ball-type connectors and were received by the licensee at the same time. The source was not new and had previously been used with no reported disconnects.

Discussion

On August 29, 1995, an inspector from the California Radiation Control Program met with INC, at its facility, to investigate the cause of the incident. INC indicated that the cause of the disconnects was the use of a drive cable connector that was not compatible with the exposure device.

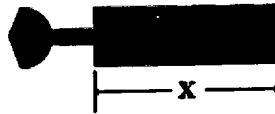
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updated on 10/23/95

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INC distributes two styles of ball-type connectors. The only difference between the connectors is the length of the sleeve that is swaged onto the control cable. The length of the sleeve (dimension X in the diagram below) is either 0.462 in. (1.17 cm) or 0.570 in. (1.45 cm). The connector with a 0.462-in. (1.17-cm)-long sleeve is designed for use with older devices that have an "S-tube" with tight-bend radii, such as Gulf Nuclear and Gamma Industry devices. The connector with a 0.570-in. (1.45-cm) sleeve is designed for use with devices that have a shallow "S-tube," such as the INC Model IR-100 and Amersham 660 series devices.



Ball-Type Connector
(not to scale)

The licensee involved in the incident described above was using a connector with a 0.570-in. (1.45-cm)-long sleeve in a device that has an "S-tube" with tight-bend radii. The tight bends in the "S-tube" caused the connector to experience severe stresses, leading to the failure of the connector.

NRC is issuing this information notice to alert licensees that when using drive cables incorporating INC ball-type connectors, they should ensure that the connector is compatible with the exposure device they are using. It is expected that recipients will review the information for applicability to their facilities and consider actions, as appropriate, to avoid problems and ensure consistency with applicable requirements. However, no specific action nor written response is required from recipients of this notice.

If you have any questions about this matter, please contact the technical contact listed below, or the appropriate regional office.

A handwritten signature in black ink, appearing to read "Donald A. Cool".

Donald A. Cool, Director
Division of Industrial and
Medical Nuclear Safety
Office of Nuclear Material Safety
and Safeguards

Technical contact: John W. Lubinski, NMSS
(301) 415-7868

Attachments:

1. List of Recently Issued NMSS Information Notices
2. List of Recently Issued NRC Information Notices

LIST OF RECENTLY ISSUED
NMSS INFORMATION NOTICES

Information Notice No.	Subject	Date of Issuance	Issued to
95-39	Brachytherapy Incidents Involving Treatment Planning Errors	09/19/95	All U.S. Nuclear Regulatory Commission Medical Licensees.
95-29	Oversight of Design and Fabrication Activities for Metal Components Used in Spent Fuel Dry Storage Systems	06/07/95	All holders of OLs or CPs for nuclear power reactors. Independent spent fuel storage installation designers and fabricators.
95-28	Emplacement of Support Pads for Spent Fuel Dry Storage Installations at Reactor Sites	06/05/95	All holders of OLs or CPs for nuclear power reactors
95-25	Valve Failure during Patient Treatment with Gamma Stereotactic Radiosurgery Unit	05/11/95	All U.S. Nuclear Regulatory Commission Medical Licensees.
94-64, Supp. 1	Reactivity Insertion Transient and Accident Limits for High Burnup Fuel	04/06/95	All holders of OLs or CPs for Nuclear Power Reactors and all fuel fabrication licensees.
95-07	Radiopharmaceutical Vial Breakage during Preparation	01/27/95	All U.S. Nuclear Regulatory Commission medical licensees authorized to use byproduct material for diagnostic procedures.
95-01	DOT Safety Advisory: High Pressure Aluminum Seamless and Aluminum Composite Hoop-Wrapped Cylinders	01/04/95	All U.S. Nuclear Regulatory Commission licensees.
94-89	Equipment Failures at Irradiator Facilities	12/28/94	All U.S. Nuclear Regulatory Commission irradiator licensees.

**LIST OF RECENTLY ISSUED
NRC INFORMATION NOTICES**

Information Notice No.	Subject	Date of Issuance	Issued to
95-43	Failure of the Bolt-Locking Device on the Reactor Coolant Pump Turning Vane	09/28/95	All holders of OLs or CPs for nuclear power reactors designed by Westinghouse Electric Corporation (W).
95-42	Commission Decision on the Resolution of Generic Issue 23, "Reactor Coolant Pump Seal Failure"	09/22/95	All holders of OLs or CPs for nuclear power reactors.
95-41	Degradation of Ventilation System Charcoal Resulting from Chemical Cleaning of Steam Generators	09/22/95	All holders of OLs or CPs for nuclear power reactors.
95-40	Supplemental Information to Generic Letter 95-03, "Circumferential Cracking of Steam Generator Tubes"	09/20/95	All holders of OLs or CPs for nuclear power reactors.
95-39	Brachytherapy Incidents Involving Treatment Planning Errors	09/19/95	All U.S. Nuclear Regulatory Commission Medical Licensees.
95-38	Degradation of Boraflex Neutron Absorber in Spent Fuel Storage Racks	09/08/95	All holders of OLs or CPs for nuclear power reactors.
95-37	Inadequate Offsite Power System Voltages during Design-Basis Events	09/07/95	All holders of OLs or CPs for nuclear power reactors.
95-36	Potential Problems with Post-Fire Emergency Lighting	08/29/95	All holders of OLs or CPs for nuclear power reactors.
95-35	Degraded Ability of Steam Generators to Remove Decay Heat by Natural Circulation	08/28/95	All holders of OLs or CPs for pressurized water reactors (PWRs).

OL = Operating License
CP = Construction Permit