

UNITED STATES
NUCLEAR REGULATORY COMMISSION
OFFICE OF FEDERAL AND STATE MATERIALS
AND ENVIRONMENTAL MANAGEMENT PROGRAMS
OFFICE OF NUCLEAR MATERIAL SAFETY AND SAFEGUARDS
OFFICE OF NEW REACTORS
WASHINGTON, DC 20555

APRIL 28, 2014

NRC INFORMATION NOTICE 2014-06: DAMAGE OF INDUSTRIAL RADIOGRAPHIC
EQUIPMENT DUE TO FALLING EQUIPMENT
AND IMPROPER MOUNTING

ADDRESSEES

All U.S. Nuclear Regulatory Commission (NRC) material licensees possessing industrial radiographic equipment, regulated under 10 CFR Part 34. All Agreement States Radiation Control Program Directors.

All holders of and users of a transportation package certificate of compliance under Title 10 of the Code of Federal Regulations (10 CFR) Part 71, "Packaging and Transportation of Radioactive Material," that possess industrial radiographic equipment regulated under 10 CFR Part 34.

All holders of and applicants for a power reactor early site permit, combined license, standard design approval, or manufacturing license under 10 CFR Part 52, "Licenses, Certifications, and Approvals for Nuclear Power Plants." All applicants for a standard design certification, including such applicants after initial issuance of a design certification rule.

PURPOSE

The NRC is issuing this Information Notice (IN) to inform licensees about the results of a recent NRC staff analysis involving radiographic equipment. It is expected that recipients will review the information for applicability to their facilities and temporary job sites to consider appropriate actions to avoid similar incidents. The NRC provides this IN to the Agreement States for their information and for distribution to their licensees, as they deem appropriate.

DESCRIPTION OF CIRCUMSTANCES

Recently, the NRC staff conducted an analysis of reported events involving radiographic equipment documented within the Nuclear Material Events Database (NMED). The data analyzed covered the period from Fiscal Years 2003 through 2013. The results of the analysis identified a large number of events in which radiography sources could not be retracted because the guide tubes (or drive cables) had been damaged after the sources were extended

ML14059A195

into the non-shielded position. Specifically, the analysis showed that equipment damage resulted either from falling construction equipment which damaged components of the radiographic equipment or when radiographic equipment fell as a result of inadequate placement or support.

A summary of similar event notifications received by the NRC which involved radiographic equipment when guide tubes (or drive cables) had been damaged is listed below. A link to each event's full report is also provided.

- In 2007, radiographers attached the guide tube to a ladder within a tank, after which the wind blew the ladder over, causing the ladder to fall on the guide tube and put a crimp in the tube. The crimp prevented the ability to retract the source back into the shielded position.

<http://www.nrc.gov/reading-rm/doc-collections/event-status/event/2007/20070920en.html>

- In 2008, radiographic equipment fell from the radiographers' vehicle and the guide tube was bent where it attached to the device. The radiographers were able to straighten the guide tube and to crank the source in and out of the equipment with increased resistance. The radiographers continued working with the damaged guide tube. Later in the day, they decided to dismount the device including the guide tube, and when unscrewing the guide tube they noticed the condition of the cable and realized that the source was not in the shielded position.

<http://www.nrc.gov/reading-rm/doc-collections/event-status/event/2008/20080910en.html>

- In 2012, radiographic equipment fell to the ground from a valve assembly while performing operations. The impact from the fall crimped the guide tube. The radiographer was not able to retract the source into the shielded position due to the crimped guide tube.

<http://www.nrc.gov/reading-rm/doc-collections/event-status/event/2012/20121227en.html>

- In 2013, a spool fell onto a guide tube during radiography operations, causing crimping of the guide tube. As a result of deformation of the guide tube, the radiography crew was unable to retract the source into the shielded position.

<http://www.nrc.gov/reading-rm/doc-collections/event-status/event/2013/20130801en.html>

DISCUSSION

Most of these reportable events with radiographic equipment occurred when the source could not be retracted into a shielded position and the source was left exposed. In these cases, the specific causes of the source retraction failures were due to: (1) the falling construction equipment which damaged components of the radiographic equipment, or (2) the radiographic equipment itself falling as a result of inadequate placement or support.

Material licensees and transportation package certificate holders and users, possessing industrial radiographic equipment regulated under 10 CFR Part 34, are being informed of these events to emphasize the importance of the physical hazards which may be present in the surrounding areas. Specifically, when performing radiography operations, construction equipment surrounding the radiographic equipment or inadequate placement of the radiographic equipment may cause damage to the equipment and prevent the retrieval of the source.

RELATED GENERIC COMMUNICATIONS

IN 1991-23, "Accidental Radiation Overexposures To Personnel Due To Industrial Radiography Accessory Equipment Malfunctions."

IN 1996-04, "Incident Reporting Requirements for Radiography Licensees."

IN 2001-03, "Incident Reporting Requirements for Radiography Licensees." (Superseded IN 1996-04).

CONTACT

This IN requires no specific action or written response. If you have any questions about the information in this notice, please contact the technical contact listed below or the appropriate regional office.

/RA/

Mark Lombard, Director
Division of Spent Fuel
Storage and Transportation
Office of Nuclear Material Safety
and Safeguards

/RA/

Laura A. Dudes, Director
Division of Materials Safety
and State Agreements
Office of Federal and State Materials
and Environmental Management Programs

/RA/

Michael C. Cheok, Director
Division of Construction Inspection
Operational Programs
Office of New Reactors

Technical Contact: Maria Arribas-Colon, FSME
(301) 415-6026
E-mail: Maria.Arribas-Colon@nrc.gov

Enclosure:
FSME List of Recently Issued
Generic Communications

CONTACT

This IN requires no specific action or written response. If you have any questions about the information in this notice, please contact the technical contact listed below or the appropriate regional office.

/RA/

Mark Lombard, Director
Division of Spent Fuel
Storage and Transportation
Office of Nuclear Material Safety
and Safeguards

/RA/

Laura A. Dudes, Director
Division of Materials Safety
and State Agreements
Office of Federal and State Materials
and Environmental Management Programs

/RA/

Michael C. Cheok, Director
Division of Construction Inspection
Operational Programs
Office of New Reactors

Technical Contact: Maria Arribas-Colon, FSME
(301) 415-6026
E-mail: Maria.Arribas-Colon@nrc.gov

Enclosure:
FSME List of Recently Issued
Generic Communications

ML14059A195

OFFICE	FSME/LB	FSME/LB	FSME/LB	FSME/LB
NAME	MArribas-Colon	JJankovich	THerrera	MKotzalas
DATE	3/7/2014	3/10 /2014	3/10/2014	3/13/2014
OFFICE	FSME/RMSB	NMSS/SFST	NRO/DCIP	FSME/MSSA
NAME	AMcIntosh	MLombard	MCheok	LDudes
DATE	3/14/2014	4/14/2014	4/17/2014	4/28/2014

OFFICIAL RECORD COPY

List of Recently Issued Office of Federal and State Materials and Environmental Management Programs Generic Communications			
Date	GC No.	Subject	Addressees
04/16/2014	RIS-2014-02	Withdrawal of NRC Generic Letter 95-08, "10 CFR 50.54(p) Process for Changes to Security Plans Without Prior NRC Approval"	All holders of and applicants for construction permits or operating licenses for nuclear power reactors under the provisions of Title 10, "Energy," of the <i>Code of Federal Regulations</i> (10 CFR) Part 50, "Domestic Licensing of Production and Utilization Facilities." All holders of and applicants for a combined license, standard design approval, or manufacturing license under 10 CFR Part 52, "Licenses, Certifications, and Approvals for Nuclear Power Reactors." All applicants for a standard design certification, including such applicants after initial issuance of a design certification rule.
03/13/2014	RIS-2014-03	Notice of 10 CFR Part 37 Implementation Deadline for NRC Licensees	All holders of and applicants for U.S. Nuclear Regulatory Commission (NRC) licenses that possess Category 1 and Category 2 quantities of radioactive material, NRC Master Material Licensees, Agreement State Radiation Control Program Directors, and State Liaison Officers
03/04/2014	IN-99-03, Rev. 1	Exothermic Reactions Involving Dried Uranium Oxide Powder (Yellowcake)	All operating uranium recovery facilities that produce uranium oxide powder (yellowcake). All Agreement States with the authority to regulate uranium mills (i.e., Utah, Colorado, Texas, Ohio, Illinois, and Washington).
01/10/2014	RIS-2014-01	Regulatory Requirements for Withholding of Proprietary Information from Public Disclosure	All distributors of general license devices submitting a request that information be withheld from public disclosure under the provisions of Title 10 of the <i>Code of Federal Regulations</i> Section 2.390, "Public Inspections, Exemptions, Requests for Withholding." All Agreement and Non-Agreement States, and State Liaison Officers.

List of Recently Issued Office of Federal and State Materials and Environmental Management Programs Generic Communications			
Date	GC No.	Subject	Addressees
11/15/2013	IN-2013-22	Recent Licensing Submittals Containing Personally Identifiable Information	All materials licensees, certificate holders, applicants, and other entities subject to regulation by the U.S. Nuclear Regulatory Commission for the use of source, byproduct, and special nuclear material. All Radiation Control Program Directors and State Liaison Officers.
10/17/2013	RIS-2013-17	Resuming Normal Interactions Between the NRC and NRC Stakeholders Following an Agency Shutdown	All U.S. Nuclear Regulatory Commission (NRC) licensees, certificate holders, permit holders, and applicants; all Agreement and Non-Agreement States, and State Liaison Officers; and other interested stakeholders.
<p>Note: This list contains the six most recently issued generic communications, issued by the Office of Federal and State Materials and Environmental Management Programs. A full listing of all generic communications may be viewed at the NRC public Web site at the following address: http://www.nrc.gov/reading-rm/doc-collections/gen-comm/index.html</p>			