

**UNITED STATES
NUCLEAR REGULATORY COMMISSION
OFFICE OF FEDERAL AND STATE MATERIALS
AND ENVIRONMENTAL MANAGEMENT PROGRAMS
WASHINGTON, DC 20555**

May 18, 2011

NRC INFORMATION NOTICE 2011-09: **FIXED GAUGE SHUTTER FAILURES
DUE TO OPERATING IN HARSH WORKING
ENVIRONMENTS**

ADDRESSEES

All U.S. Nuclear Regulatory Commission (NRC) specific and general fixed gauge licensees. All Agreement State Radiation Control Program Directors and State Liaison Officers.

PURPOSE

The NRC is issuing this Information Notice (IN) to alert fixed gauge specific and general licensees about the potential for the failure of shutter closure mechanisms due to fixed gauges operating in harsh working environments. It is expected that recipients will review the information for applicability to their facilities and consider actions, as appropriate, to avoid similar incidents. Recommendations contained in this Information Notice are not new NRC requirements; therefore, neither specific action nor written response is required. NRC is providing this Information Notice to the Agreement States for their information, and for distribution to their licensees as appropriate.

DESCRIPTION OF CIRCUMSTANCES

On September 18, 2009, the NRC issued IN 2009-18, "Performance Of Required Shutter Checks And Reporting Of Gauge Shutter Failures." Since IN 2009-18 was issued the NRC received an increase in reports of fixed gauge shutter failures occurring during shutter closure checks performed by licensees. Since September 2009, there have been twenty reported events of shutters being stuck in the open position and unable to close as a result of the environment the gauges were used in. Causes for the stuck shutter include corrosion, rust, or debris. The reports of stuck shutters are not specific to any vendor or model, but specific to the environment where the gauges are located.

Please refer to IN 2009-18, provided at <http://www.nrc.gov/reading-rm/doc-collections/gen-comm/info-notices/2009/index.html> for more discussion on reporting of fixed gauge shutter failures.

DISCUSSION

Fixed gauges containing licensed radioactive materials are used by specific and general licensees in a wide variety of environments. Fixed gauges routinely operate in a continuous mode with the shutter open, exposing the radioactive source inside, this increases the chances of corrosion, the buildup of rust, or debris to affect the ability of the shutter to close.

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Licensees who possess fixed gauges with shutters are required to test their shutters to ensure that they can be closed. This requirement is imposed by license condition for specific licensees and for general licensees the requirement is found in 10 CFR 31.5 (c)(2). The typical timeframe for conducting a shutter check is every six months, which is acceptable for most applications where fixed gauges are used.

Based on the reports of shutters stuck in the open position due to debris or corrosion the NRC is suggesting that licensees with fixed gauges used in environments where the gauges may be subjected to corrosives, water buildup, or debris consider performing shutter checks on a more frequent basis than is required by their license. The NRC understands that since many fixed gauges are frequently in continuous use, licensees should look for time during planned or unplanned outages to conduct checks of fixed gauge shutters. In considering increased shutter checks licensees should take into account factors like the accessibility of the gauge (i.e. the gauge is mounted 100 feet above the ground) and the potential for employees to be exposed should a shutter get stuck in the open position. In cases where such considerations do not warrant routine increased inspection of the gauges, licensees should consider such inspections when other work is planned in the area near the gauge.

The concern with shutters that are stuck in the open position is that when the process or line is stopped workers performing maintenance or other work in the area could receive exposures. For workers considered non-radiation workers, under certain circumstances it would not take long to exceed the applicable regulatory limits for radiation exposure.

As always, fixed gauge users should consult their operators manuals for the proper maintenance of their gauges and any indications that a shutter may have a buildup of debris or if any components are beginning to corrode.

Below are links of event notifications received by the NRC for fixed gauges with shutters stuck in the open position where the environment was the cause:

<http://www.nrc.gov/reading-rm/doc-collections/event-status/event/2010/20101209en.html#en46465>

<http://www.nrc.gov/reading-rm/doc-collections/event-status/event/2010/20100818en.html#en46172>

CONTACTS

This Information Notice requires no specific licensee action or response. If you have any questions about the information in this notice, please contact one of the technical contacts below, or the appropriate regional office.

/RA/

Terrence Reis, Acting Director
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Enclosure: List of Recently Issued FSME
Generic Communications

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OFC	FSME/LB	FSME/LB	FSME/RMSB	FSME/LISD	FSME/MSSA
NAME	THerrera	JFoster	AMcIntosh	JLuehman	TReis
DATE	5/17/2011	5/17/2011	5/17/2011	5/17/2011	5/18/2011

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List of Recently Issued Office of Federal and State Material and Environmental Management Programs Generic Communications			
Date	GC No.	Subject	Addressees
11/19/2010	IN-2010-24	Notice of Possible Source Leakage During Non-Routine Maintenance on a Gammacell 40 Irradiator	All academic Type A broad scope licensees; all medical institutions; all self shielded irradiators less than or equal to 10,000 cues licensees; all Radiation Control Program Directors and State Liaison Officers.
04/27/2011	IN-2011-11	Reporting Requirement for Heat and Smoke Detector Failures in 10 CFR Part 36 Irradiators	All holders of irradiator licenses issued by the U.S. Nuclear Regulatory Commission under to Title 10 of the <i>Code of Federal Regulations</i> (10 CFR), Part 36, "Licensees and Radiation Safety Requirements for Irradiators;" Agreement State Radiation Control Program Directors and State Liaison Officers
01/21/10	RIS-2010-02	The Global Threat Reduction Initiative (GTRI) Federally Funded Voluntary Security Enhancements for High-Risk Radiological Material	All holders of operating licenses for nuclear power reactors and research and test reactors under the provisions of Title 10 of the <i>Code of Federal Regulations</i> (10 CFR) Part 50, "Domestic Licensing of Production and Utilization Facilities," except those that have ceased operations and have certified that fuel has been permanently removed from the reactor vessel and have no spent fuel stored on-site. All U.S. Nuclear Regulatory Commission (NRC) fuel cycle facilities licensed under 10 CFR Part 40, "Domestic Licensing of Source Material" or 10 CFR Part 70, "Domestic Licensing of Special Nuclear Material" and gaseous diffusion plants certified under 10 CFR Part 76, "Certification of Gaseous Diffusion Plants." All holders of site-specific licenses for independent spent fuel storage installations (ISFSIs) under the provisions of 10 CFR Part 72, "Licensing Requirements for the Independent Storage of Spent Nuclear Fuel, High-level Radioactive Waste, and Reactor-related Greater than Class C Waste," and all holders of 10 CFR Part 50 licenses with ISFSIs under the general license provisions of 10 CFR Part 72. All NRC materials licensees authorized to possess Category 1 or Category 2 quantities of radioactive materials, under the provisions of 10 CFR Parts 30, "Rules of General Applicability to Domestic Licensing of Byproduct Material," 40, and 70.

List of Recently Issued Office of Federal and State Material and Environmental Management Programs Generic Communications			
Date	GC No.	Subject	Addressees
05/25/10	RIS-2010-04	Monitoring the Status of Regulated Activities During a Pandemic	All holders of operating licenses for nuclear power reactors and research and test reactors under the provisions of Title 10 of the <i>Code of Federal Regulations</i> (10 CFR) Part 50, "Domestic Licensing of Production and Utilization Facilities," except those that have ceased operations and have certified that fuel has been permanently removed from the reactor vessel and have no spent fuel stored on-site. All U.S. Nuclear Regulatory Commission (NRC) fuel cycle facilities licensed under 10 CFR Part 40, "Domestic Licensing of Source Material" or 10 CFR Part 70, "Domestic Licensing of Special Nuclear Material" and gaseous diffusion plants certified under 10 CFR Part 76, "Certification of Gaseous Diffusion Plants." All holders of site-specific licenses for independent spent fuel storage installations (ISFSIs) under the provisions of 10 CFR Part 72, "Licensing Requirements for the Independent Storage of Spent Nuclear Fuel, High-level Radioactive Waste, and Reactor-related Greater than Class C Waste," and all holders of 10 CFR Part 50 licenses with ISFSIs under the general license provisions of 10 CFR Part 72. All NRC materials licensees authorized to possess Category 1 or Category 2 quantities of radioactive materials, under the provisions of 10 CFR Parts 30, "Rules of General Applicability to Domestic Licensing of Byproduct Material," 40, and 70.
09/10/10	RIS-2010-09	Radiation Safety Officers For Medical-Use Licenses Under 10 CFR Part 35	All U.S. Nuclear Regulatory Commission (NRC) medical-use licensees, NRC master material licensees, Agreement State Radiation Control Program Directors, and State Liaison Officers.
01/25/11	RIS-2011-01	NRC Policy On Release Of Iodine-131 Therapy Patients Under 10 CFR 35.75 To Locations Other Than Private Residences	All U.S. Nuclear Regulatory Commission (NRC) medical-use licensees, NRC master material licensees, Agreement State Radiation Control Program Directors, and State Liaison Officers.
<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 (FSME). A full listing of all generic communications may be viewed at the NRC public website at the following address: http://www.nrc.gov/reading-rm/doc-collections/gen-comm/index.html</p>			