SSINS No.: 6835
IN 87-26

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

June 11, 1987

NRC INFORMATION NOTICE NO. 87-26: CRACKS IN STIFFENING RINGS ON 48-INCH-DIAMETER UF_6 CYLINDERS

Addressees:

All uranium fuel fabrication and conversion facilities.

Purpose:

This notice is being issued to alert recipients to a possible safety problem related to UF_6 cylinders. It is suggested that recipients review the information and consider actions, if appropriate, to preclude possible safety problems at their facilities. However, suggestions contained in this Information Notice do not constitute NRC requirements; therefore, no specific action or written response is required.

Description of Circumstances:

The NRC has received information from the manufacturer that some 48-inch-diameter UF_6 cylinders manufactured by the W. H. Stewart Company of Oklahoma City, Oklahoma, have stiffening rings fabricated from a material (ASTM A306, Grade 75 steel) which is not specified in ANSI Standard N14.1-1982, or in a previous edition thereof and which is not an equivalent approved material under the ASME Boiler and Pressure Vessel Code, Section VIII, Division 1. The cylinders in question are identified by the following manufacturer's serial numbers:

2309 through 2333
2442 through 2617
2782 through 2828

However, because W. H. Stewart Company records are incomplete, other 48-inch-diameter cylinders manufactured after May 1975 may be affected. Therefore, this Information Notice is also applicable to any other UF_6 cylinder you have cause to believe contains stiffening rings made of ASTM A306, Grade 75 steel.

Discussion:

The Department of Transportation (DOT) has published a rule (see 51 Fed. Reg. 46675, December 24, 1986) that after June 30, 1987, will require UF_6 shipping containers to meet the provisions of ANSI Standard N14.1-1982, or a previous edition thereof [49 CFR Part 173.420(a)(2)]. The ANSI Standard specifies the design of UF_6 cylinders, including materials of construction for stiffening

rings. The ANSI Standard also permits substitute materials to be used for stiffening rings provided they are equivalent approved materials under the ASME Boiler and Pressure Vessel Code, Section VIII, Division 1, which are compatible with fabrication of the cylinders involved. Shipment of cylinders that do not meet the ANSI Standard is not authorized under the new DOT rule scheduled to become effective on June 30, 1987.

Wedge-shaped cracks have been detected on some of the stiffening rings on identified cylinders.

The cause and safety significance of the cracks have not been determined. The stiffening rings may serve multiple safety and functional purposes; they are welded to the lifting lugs and may contribute to the strength of those lugs. Therefore, licensees may want to consider inspecting the cylinders in question for cracks in the stiffening rings, lifting lugs, and associated weldments, including those weldments that join the stiffening rings to the cylindrical shell and to the lifting lugs. Extra care and caution should be used when lifting or handling any cylinder that has cracked stiffening rings, lifting lugs, or weldments.

DOT regulates the transport of UF_6 cylinders. Shipment of UF_6 cylinders that do not meet the ANSI Standard is not authorized under the new DOT rule scheduled to become effective on June 30, 1987. DOT should be consulted before you ship any of the identified cylinders off site.

No specific action or written response is required by this Information Notice. If you have questions about this matter, please contact those listed below.

Richard E. Cunningham

Richard E. Cunningham, Director
Division of Fuel Cycle, Medical,
Academic, and Commercial Use Safety
Office of Nuclear Material Safety
and Safeguards

DOT Technical Contact on
transportation questions:
Michael E. Wangler
Telephone: (202)366-4498

NRC Technical Contact on
all other questions:
Leland C. Rouse
Telephone: (301)427-4309

Attachment: List of Recently Issued NRC Information Notices

LIST OF RECENTLY ISSUED INFORMATION NOTICES 1987

Information Notice No.	Subject	Date of Issuance	Issued to
87-25	Potentially Significant Problems Resulting from Human Error Involving Wrong Unit, Wrong, Train, or Wrong Component Events.	6/11/87	All nuclear power reactor facilities holding an OL or CP.
87-24	Operational Experience Involving Losses of Electrical Inverters	6/4/87	All nuclear power reactor facilities holding an OL or CP.
87-23	Loss of Decay Heat Removal During Low Reactor Coolant Level Operation	5/27/87	All PWR facilities holding an OL or CP.
87-22	Operator Licensing Requalification Examinations at Nonpower Reactors	5/22/87	All research and nonpower reactor facilities.
87-21	Shutdown Order Issued Because Licensed Operators Asleep While on Duty	5/11/87	All nuclear power facilities holding an OL or CP and all licensed operators.
87-20	Hydrogen Leak in Auxiliary Building	4/20/87	All nuclear power facilities holding an OL or CP
86-108 Sup. 1	Degradation of Reactor Coolant System Pressure Boundary Resulting from Boric Acid Corrosion	4/20/87	All PWR facilities holding an OL or CP.
86-64 Sup. 1	Deficiencies in Upgrade Programs for Plant Emergency Operating Procedures.	4/20/87	All nuclear power facilities holding a CP or OL.
85-61 Sup. 1	Misadministrations to Patients Undergoing Thyroid Scans	4/15/87	All licensees authorized to use byproduct material
87-19	Perforation and Cracking of Rod Cluster Control Assemblies	4/9/87	All Westinghouse power PWR facilities holding an OL or CP

OL = Operating License
CP = Construction Permit

rings. The ANSI Standard also permits substitute materials to be used for stiffening rings provided they are equivalent approved materials under the ASME Boiler and Pressure Vessel Code, Section VIII, Division 1, which are compatible with fabrication of the cylinders involved. Shipment of cylinders that do not meet the ANSI Standard is not authorized under the new DOT rule scheduled to become effective on June 30, 1987.

Wedge-shaped cracks have been detected on some of the stiffening rings on identified cylinders.

The cause and safety significance of the cracks have not been determined. The stiffening rings may serve multiple safety and functional purposes; they are welded to the lifting lugs and may contribute to the strength of those lugs. Therefore, licensees may want to consider inspecting the cylinders in question for cracks in the stiffening rings, lifting lugs, and associated weldments, including those weldments that join the stiffening rings to the cylindrical shell and to the lifting lugs. Extra care and caution should be used when lifting or handling any cylinder that has cracked stiffening rings, lifting lugs, or weldments.

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OFC:	PPMB*	FCOB*	SGTB*	SGTB*	SGTB*	FCOB*	FCOB*
NAME:	RSanders/jp	JRMetzger	CRChappell	CEWilliams	CEMacDonald	DACool	JWNHickey
DATE:	05/ /8	05/ /87	05/ /87	05/ /87	05/ /87	05/ /87	05/ /87

OFC:	FCSB	NRR	FCMA	FCMA
NAME:	LCRouse*	CRossi*	GLSjoblom	RECunningham
DATE:	05/ /87	05/ /87	06/ /87	06/ /87

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Original Signed by
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NAME:	LCRouse*	CRossi*	GLSjoblom	RECunningham			
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