

UNITED STATES
NUCLEAR REGULATORY COMMISSION
OFFICE OF NUCLEAR REACTOR REGULATION
WASHINGTON, D.C. 20555

June 10, 1993

NRC INFORMATION NOTICE 93-43: USE OF INAPPROPRIATE LUBRICATION OILS IN
SAFETY-RELATED APPLICATIONS

Addressees

All holders of operating licenses or construction permits for nuclear power reactors.

Purpose

The U.S. Nuclear Regulatory Commission (NRC) is issuing this information notice to alert addressees to a potential for introducing inappropriate lubricating oils into safety-related components. 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 NRC requirements; therefore, no specific action or written response is required.

Description of Circumstances

During routine surveillance of plant equipment at the Farley nuclear plant in June-July 1992, the operations staff discovered that lubricating oils for the outboard and inboard bearings of component cooling water pump motors were discolored. A closer examination revealed some brown sheen on the bearing and other indications of bearing wear. The licensee analyzed samples of the lubricating oils and determined that the oils were not of the viscosity specified for that application.

The licensee subsequently sampled the lubrication oils in all plant safety-related equipment. Of 33 samples taken, 18 revealed the presence of an inappropriate lubrication oil. In some cases, the correct oil was not present; in others, the sample indicated that a mixture of the correct oil and an incorrect oil was present.

Discussion

The licensee determined that, because of a wrong label on a drum supplied to the licensee by the vendor, Texaco Regal R & O 68 oil was used in safety-related applications where Texaco R & O 32 oil was specified. The oil was purchased as a commercial grade product. The licensee had not sampled the oil when it was delivered to verify that it had received the oil it had ordered.

The licensee hired a consultant to evaluate the effect of having used the R & O 68 oil instead of the R & O 32 oil. The consultant determined that no serious problem was likely to occur in the short term, because the two oils

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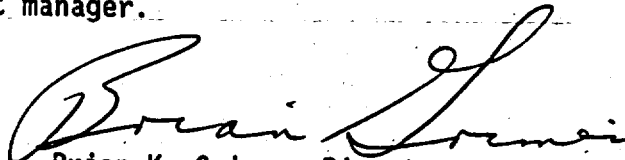
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differed only in viscosity. All of the additives were identical. However, the consultant also indicated that the more viscous oil (R & O 68) would generate more heat from higher friction. This could increase oxidation of the oil, resulting in shorter oil lifetime. The higher viscosity might also cause bearing distress, which could lead to increased wear on the bearing.

The licensee replaced the oil in all of the affected equipment, after assuring that the correct oil was being used. Further, the licensee has instituted procedures to ensure that oil is sampled upon receipt at the warehouse, before release into the plant, and again before use.

Appendix B to 10 CFR Part 50 contains the NRC regulations for procurement quality assurance (QA) and quality control (QC) for products to be used in safety-related applications. Generic Letter (GL) 89-02, "Actions to Improve the Detection of Counterfeit and Fraudulently Marketed Products," and GL 91-05, "Licensee Commercial-Grade Procurement and Dedication Programs," discuss commercial-grade dedication and the characteristics of effective procurement and dedication programs.

This information notice requires no specific action or written response. If you have any questions about the information in this notice, please contact the technical contacts listed below, or the appropriate Office of Nuclear Reactor Regulation (NRR) project manager.



Brian K. Grimes, Director
Division of Operating Reactor Support
Office of Nuclear Reactor Regulation

Technical contacts: George Maxwell, RII
(205) 899-3386

Michael Morgan, RII
(205) 899-3387

Todd A. Cooper, RII
(704) 875-1681

Attachment:
List of Recently Issued NRC Information Notices

LIST OF RECENTLY ISSUED
 NRC INFORMATION NOTICES

Information Notice No.	Subject	Date of Issuance	Issued to
93-42	Failure of Anti-Rotation Keys in Motor-Operated Valves Manufactured by Velan	06/09/93	All holders of OLs or CPs for nuclear power reactors.
93-41	One Hour Fire Endurance Test Results for Thermal Ceramics Kaowool, 3M Company FS-195 and 3M Company Interam E-50 Barrier Systems	05/28/93	All holders of OLs or CPs for nuclear power reactors.
93-40	Fire Endurance Test Results for Thermal Ceramics FP-60 Fire Barrier Material	05/26/93	All holders of OLs or CPs for nuclear power reactors.
93-39	Radiation Beams from Power Reactor Biological Shields	05/25/93	All holders of OLs or CPs for nuclear power reactors.
93-38	Inadequate Testing of Engineered Safety Features Actuation System	05/24/93	All holders of OLs or CPs for nuclear power reactors.
93-37	Eyebolts with Indeterminate Properties Installed in Limitorque Valve Operator Housing Covers	05/19/93	All holders of OLs or CPs for nuclear power reactors.
93-36	Notifications, Reports, and Records of Misadministrations	05/07/93	All U.S. Nuclear Regulatory Commission medical licensees.
93-35	Insights from Common-Cause Failure Events	05/12/93	All holders of OLs or CPs for nuclear power plants (NPPs).

OL = Operating License
 CP = Construction Permit

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Appendix B to 10 CFR Part 50 contains the NRC regulations for procurement quality assurance (QA) and quality control (QC) for products to be used in safety-related applications. In addition, the NRC has provided further guidance in Regulatory Guides 1.28, 1.33, and 1.123. These requirements and guides, if properly implemented, provide a measure of assurance for the suitability of products to be used in safety-related systems. Generic Letter (GL) 89-02, "Actions to Improve the Detection of Counterfeit and Fraudulently Marketed Products," and GL 91-05, "Licensee Commercial-Grade Procurement and Dedication Programs," discuss commercial-grade dedication and the characteristics of effective procurement and dedication programs.

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Original signed by
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*SEE PREVIOUS CONCURRENCE

*OGCB:DORS	*RVIB:DRIL	*PDII-1	*DRP:RII	*TechEd
TJKim	LNorrholm	JMitchell	JJohnson	RSanders
03/30/93	03/30/93	03/30/93	04/12/93	04/13/93

*OGCB:DORS	*D/DRIL:NRR	*D/DE/NRR	D/DORS:NRR
GHMarcus	CRossi	JRichardson	BK Grimes
04/15/93	05/26/93	05/27/93	06/4/93

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BJ
6/1/93*

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GHMarcus	Gross	JRichardson	BGrimes	
04/15/93	05/26/93	05/27/93	05/ /93	<i>mkw</i>

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Many utilities are using the Electric Power Research Institute (EPRI) document NP-5652, "Guideline for the Utilization of Commercial Grade Items in Nuclear Safety Related Application," as the basis for a dedication process for commercially procured materials. According to the EPRI document, the utilization of commercial-grade items intended for safety-related application involves two distinct processes: (1) a technical evaluation to assure that requirements for an acceptable item are specified in the procurement document and (2) acceptance methods to reasonably assure the item received is the item that was specified.

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OGCB:DORS
TJKim *JK*
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RVIB:DRILL
LNOR:KIM
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PDII-1 *Jan*
JMitchell
03/30/93

AHerdt *for*
DRP:RII
JJohnson
04/12/93

TechEd
JMain *Rlanders*
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DORS
BGrimes
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change to
Justin Mitchell
JMitchell