SSINS No.: 6835
IN 86-103

UNITED STATES
NUCLEAR REGULATORY COMMISSION
OFFICE OF INSPECTION AND ENFORCEMENT
WASHINGTON, D.C. 20555

December 16, 1986

IE INFORMATION NOTICE NO. 86-103: RESPIRATOR COUPLING NUT ASSEMBLY FAILURES

Addressees:

All nuclear power reactor facilities holding an operating license or a construction permit and fuel fabrication facilities.

Purpose:

This information notice is being issued for two reasons. This notice is primarily provided to alert recipients to a mechanical failure of coupling nut assemblies used with Mine Safety Appliance (MSA) respirators. This notice also corrects erroneous statements contained in IN 86-46. Recipients are expected to review the information for applicability to their respiratory protection program and consider actions, if appropriate, to preclude similar problems at their facilities. However, suggestions contained in this notice do not constitute NRC requirements; therefore, no specific action or written response is required.

Description of Circumstances:

IE Information Notice 86-46, "Improper Cleaning and Decontamination of Respirator Protection Equipment," issued June 12, 1986, discusses how exposure to organic solvents produces cracking in plastic coupling nut assemblies on MSA respirators. This office has received several comments that IN 86-46 incorrectly stated that the coupling nuts are used with the Ultra-Twin respirators. A check with MSA indicated that the coupling nut assembly (MSA Part #96547) is used with the ULTRA-VUE face piece, not the Ultra-Twin.

MSA redesigned the coupling nut assemblies discussed in IN 86-46. This new simplified design (supplied by MSA under the same part number as the old design) has not been completely successful. The Pilgrim Station recently has reported that several of the new design coupling nut assemblies have failed during mask removal. When the mask is removed by grasping the filter housing, the new design appears to concentrate the force onto the coupling assembly sealing flange. This leads to mechanical failure of the sealing flange which causes the filter (with the nut attached) to separate from the mask. As stated in IN 86-46, this coupling nut is also used to connect the Ultra-Vue face piece to the air supply hose of an MSA self-contained breathing apparatus (SCBA). It is unclear whether the SCBA hose connection can produce the mechanical leverage necessary to break the coupling assembly seal flange; however, a damaged coupling assembly failing under use could lead to a life-threatening situation for the wearer.

MSA is currently reevaluating the coupling nut assembly to eliminate the failure mechanism noted by Pilgrim. In the interim, they have replaced the faulty coupling nuts from Pilgrim with the original designed style. Licensees experiencing problems with these coupling nuts should contact Eric Beck, Product-line Manager, MSA, Pittsburgh, PA, on (412) 273-5194.

No specific action or written response is required by this information notice. If you have any questions about this matter, please contact the Regional Administrator of the appropriate regional office or this office.

Edward L. Jordan, Director
Division of Emergency Preparedness
and Engineering Response
Office of Inspection and Enforcement

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Attachment: List of Recently Issued IE Information Notices

Attachment 1
IN 86-103
December 16, 1986

LIST OF RECENTLY ISSUED
IE INFORMATION NOTICES

Information Notice No.	Subject	Date of Issue	Issued to
86-102	Repeated Multiple Failures Of Steam Generator Hydraulic Snubbers Due To Control Valve Sensitivity	12/15/86	All power reactor facilities holding an OL or CP
86-101	Loss Of Decay Heat Removal Due To Loss Of Fluid Levels In Reactor Coolant System	12/12/86	All PWR facilities holding an OL or CP
86-100	Loss Of Offsite Power To Vital Buses At Salem 2	12/12/86	All PWRs or BWRs holding an OL or CP
86-99	Degradation Of Steel Containments	12/8/86	All power reactor facilities holding an OL or CP
86-21 Sup. 1	Recognition Of American Society Of Mechanical Engineers Accreditation Program For N Stamp Holders	12/4/86	All power reactor facilities holding an OL or CP
86-98	Offsite Medical Services	12/2/86	All power reactor facilities holding an OL or CP
86-97	Emergency Communications System	11/28/86	All power reactor facilities holding an OL or CP and fuel facilities
86-96	Heat Exchanger Fouling Can Cause Inadequate Operability Of Service Water Systems	11/20/86	All power reactor facilities holding an OL or CP
86-95	Leak Testing Iodine-125 Sealed Sources In Lixi, Inc. Imaging Devices and Bone Mineral Analyzers	11/14/86	All NRC licensees authorized to use Lixi, Inc. imaging devices
86-94	Hilti Contrete Expansion Anchor Bolts	11/6/86	All power reactor facilities holding an OL or CP

OL = Operating License
CP = Construction Permit