

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

August 18, 1989

NRC INFORMATION NOTICE NO. 89-60: MAINTENANCE OF TELETHERAPY UNITS

Addressees:

All U.S. Nuclear Regulatory Commission (NRC) Medical Teletherapy Licensees.

Purpose:

An information notice provides information to licensees to consider for application to their activities. While an Information Notice provides information to improve safety, to improve compliance, or to notify licensees of problems or violations of other licensees, it does not establish a new requirement or require a written response to the NRC.

This notice is intended to alert recipients to NRC concerns about proper maintenance of teletherapy units. It emphasizes the importance of five-year inspections and services as required by 10 CFR Section 35.647. It is expected that licensees will review this information for applicability to their programs, distribute this Notice to those responsible for radiation safety, and consider actions, if appropriate, to preclude safety problems from occurring at their facilities.

Description of Circumstances:

During a routine inspection, NRC inspectors found that the licensee's teletherapy unit was in poor condition and significantly overdue for service and preventive maintenance, thus raising the question of whether the unit was safe to operate. A service company had performed a five-year inspection in August 1988, and found that many parts that the manufacturer considered critical components had not been replaced according to the recommended frequency. In fact, many of the critical components were original parts, dating from when the unit was first placed into service in 1974.

Examples of critical components needing periodic replacement are: the field light cord reel, source drawer solenoids, air pressure switch, air hoses and fittings, and treatment timer. If any of these components failed, it could significantly increase the potential of the source failing to return to the shielded position. This could lead to unnecessary radiation exposures to both employees and patients, or an overexposure or medical misadministration. In fact, the field light cord reel on this unit had failed in 1983, and the source could not be fully retracted.

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Although the service company informed the licensee of the critical need for service, the licensee had not taken any action to service the unit. Apparently, the licensee planned to eventually replace the entire unit.

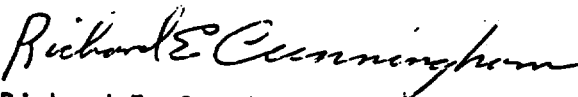
As a result of the safety concerns raised by NRC, the licensee was required to complete the needed service on an emergency basis. A heavy patient load was disrupted temporarily, but the disruption could have been worse if the service had taken a long time.

Discussion:

Title 10 CFR Section 35.647 requires licensees to have their teletherapy units fully inspected and serviced during teletherapy source replacements, or at intervals not to exceed five years, whichever comes first. The purpose of the inspection is to assure safe operation of the units, specifically proper functioning of the source exposure mechanism.

Licensees should pay close attention to the results of their five-year inspections, and assure that recommended service is performed promptly. Failure to maintain teletherapy units in safe operating condition could result in radiation incidents and/or enforcement action by NRC.

This information notice does not require any written response. If you have any questions about this matter, please contact the appropriate NRC Regional Office or this office.


Richard E. Cunningham, Director
Division of Industrial and
Medical Nuclear Safety, NMSS

Technical Contacts: Jack R. Metzger, NMSS
(301) 492-3424

R. J. Caniano, Region III
(312) 790-5721

Attachments:

1. List of Recently Issued NMSS Information Notices
2. List of Recently Issued NRC Information Notices

LIST OF RECENTLY ISSUED
NMSS INFORMATION NOTICES

| Information Notice No. | Subject | Date of Issuance | Issued to |
|------------------------|---|------------------|--|
| 89-46 | Confidentiality of Exercise Scenarios | 05/11/89 | All holders of licenses for fuel cycle facilities and byproduct material licensees having an approved emergency response plan. |
| 89-37 | Proposed Amendments to 40 CFR Part 61, Air Emission Standards for Radionuclides | 04/04/89 | All U.S. NRC licensees |
| 89-35 | Loss and Theft of Unsecured Licensed Material | 03/30/89 | All U.S. NRC byproduct, source and special nuclear material licensees |
| 89-34 | Disposal of Americium Well-Logging Sources | 03/30/89 | All holders of U.S. NRC specific licenses authorizing well-logging activities. |
| 89-25 | Unauthorized Transfer of Ownership or Control of Licensed Activities | 03/07/89 | All NRC source, byproduct, and special nuclear material licensees. |
| 89-24 | Nuclear Criticality Safety | 03/06/89 | All fuel cycle licensees and other licensees possessing more than critical mass quantities of special nuclear material. |
| 89-13 | Alternative Waste Management Procedures in Case of Denial of Access to Low-Level Waste Disposal Sites | 02/08/89 | All holders of NRC specific licenses. |

LIST OF RECENTLY ISSUED
NRC INFORMATION NOTICES

| Information Notice No. | Subject | Date of Issuance | Issued to |
|------------------------|--|------------------|---|
| 89-59 | Suppliers of Potentially Misrepresented Fasteners | 8/16/89 | All holders of Ols or CPs for nuclear power reactors. |
| 89-58 | Disablement of Turbine-Driven Auxiliary Feedwater Pump Due to Closure of One of the Parallel Steam Supply Valves | 8/3/89 | All holders of Ols or CPs for PWRs. |
| 89-57 | Unqualified Electrical Splices in Vendor-Supplied Environmentally Qualified Equipment | 7/26/89 | All holders of Ols or CPs for nuclear power reactors. |
| 89-56 | Questionable Certification of Material Supplied to the Defense Department by Nuclear Suppliers | 7/20/89 | All holders of Ols or CPs for nuclear power reactors. |
| 89-45, Supp. 1 | Metalclad, Low-Voltage Power Circuit Breakers Refurbished With Substandard Parts | 7/6/89 | All holders of Ols or CPs for nuclear power reactors. |
| 89-55 | Degradation of Containment Isolation Capability by a High-Energy Line Break | 6/30/89 | All holders of Ols or CPs for nuclear power reactors. |
| 89-54 | Potential Overpressurization of the Component Cooling Water System | 6/23/89 | All holders of Ols or CPs for nuclear power reactors. |
| 89-53 | Rupture of Extraction Steam Line on High Pressure Turbine | 6/13/89 | All holders of Ols or CPs for nuclear power reactors. |
| 88-46, Supp. 3 | Licensee Report of Defective Refurbished Circuit Breakers | 6/8/89 | All holders of Ols or CPs for nuclear power reactors. |
| 89-52 | Potential Fire Damper Operational Problems | 6/8/89 | All holders of Ols or CPs for nuclear power reactors. |

OL = Operating License
CP = Construction Permit

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As a result of the safety concerns raised by NRC, the licensee was required to complete the needed service on an emergency basis. A heavy patient load was disrupted temporarily, but the disruption could have been worse if the service had taken a long time.

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