Letter Dated February 6, 1978 ... Regarding Redistribution of Backlighted Dials

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See the memorandum from J. R. Mapes to G. W. Kerr dated May 31, 1978. It is an OELD opinion that an NRC distribution license is not needed to return to owners repaired watches containing the original tritium sources. If the original tritium source is replaced with a new source, an NRC distribution license is required.

An OELD opinion was sought on the following questions concerning the licensing requirements applicable to the repair and redistribution of watches containing approximately 200 millicuries of tritium enclosed in three glass vials. These watches are generally described as liquid crystal display (LCD) watches back lighted by tritium activated luminous sources. The tritium used in the luminous sources is byproduct material within the meaning of Section 11e of the Atomic Energy Act of 1954, as amended. OELD is of the opinion that under the Commission's existing regulations these questions be answered as follows.

1. Are repair facilities required to have an NRC distribution license to return repaired watches that contain the original tritium sources to the owners?

No. Since repaired watches containing original tritium sources do not lose their status as exempt products under 10 CFR 30.19, an NRC distribution license is not required to return these watches to the owners.

2. Is an NRC distribution license required when the original tritium source is replaced with a new source and returned to the owner?

Yes. When an LCD watch is repaired by replacing the original tritium source or tritium time module with a new source or time module, the repairer must obtain a specific NRC or Agreement State byproduct material license authorizing the repair and a specific NRC distribution.
license authorizing the return of the watch to the owner.

3. Is it necessary for an individual offering repair services on watches containing 200 millicuries tritium sources to be licensed by the NRC or an Agreement State?

The answer depends on the type of repair service offered. A person performing repairs which do not involve replacement of the original tritium source or tritium time module is not required to be licensed. That same person, however, must obtain a specific byproduct material license either from NRC or an Agreement State in order to perform repairs that involve replacement of the original tritium source or tritium time module with a new tritium source or time module. Persons making such repairs are also required to obtain an NRC distribution license authorizing the return of the repaired watches to their owners.

The preceding analysis and conclusions leave one problem unresolved. If the manner in which the tritium source and/or tritium time module is inserted into an LCD watch is significant from the radiological health and safety standpoint, there would appear to be no justifiable basis for distinguishing between repairs that involve removal and reinsertion of the original tritium source or tritium time module and repairs that involve replacement of the original tritium source or tritium time module with a new tritium source or time module. This concern raises the question of the propriety of treating any repairs of LCD watches involving the tritium source or tritium time module as exempt "uses" within the meaning of 10 CFR 30.19.

The propriety of authorizing distribution of these items as exempt from further regulation in the face of a safety evaluation that virtually calls for (i.e., "anticipates") certain repairs to be done by the manufacturer can also be questioned. How can radiological health and safety be assured when the item (or its user) is exempt from regulation? In the absence of such assurance, how is the exemption justified? Perhaps a definitive health physics analysis may be needed to answer these questions. In any event, some further thought on this matter seems to be called for.

Regulatory references: 10 CFR 30.19, 10 CFR 32.22, 10 CFR 150.15
Subject codes: 3.5, 3.6, 12.2, 12.9

Applicability: Byproduct Material