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

September 24, 1979

IE Circular No. 79-20

FAILURE OF GTE SYLVANIA RELAY, TYPE PM BULLETIN 7305, CATALOG 5U12-11-AC WITH
A 120V AC COIL

Description of Circumstances:

During inspection of relays in the Engineered Safeguards Actuation System at Metropolitan Edison Three Mile Island Nuclear Station Unit #1, relay 62X2B/RC1A failed to drop out when the coil was deenergized. The failed relay would not prevent component starting but would have reduced the 2 of 3 coincidence logic to 2 of 2, affecting Decay Heat Closed Cooling Pump A and Nuclear Services Closed Cooling Pump A or B. The cause for failure was attributed to a notch in the armature operating rod. The notch occurs where the rod vibrates against the magnet assembly due to coil hum. A review of the history of this component indicates that similar relays failed during 1977 through 1979 at least one of which was attributed to notching. An inspection of forty-eight (48) relays by this licensee indicated that twenty-five (25) of the relays had detectable notches ranging from 0.001 to 0.003 inches deep.

Recommended Actions for Licensees' Consideration:

1. Ensure that all GTE Sylvania Relays Type PM Bulletin 7305, with a 120V AC Coil used in or affecting the operation of safety-related equipment are examined to ensure that the armature operating rod is not notched and is operating freely.
2. Relays found with detectable notches on the operating rod should be corrected. If correction cannot be accomplished then administrative controls should be initiated to assure demonstrated operation until the relay condition is corrected.

No written response to this Circular is required. If you require additional information regarding this subject, contact the Director of the appropriate NRC Regional Office.

LISTING OF IE CIRCULARS ISSUED IN
LAST SIX MONTHS

Circular No.	Subject	Date of Issued	Issued to
79-20	Failure of GTE Sylvania Relay, Type PM Bulletin 7305, Catalog 5U12-11-AC With A 120V AC Coil	9/24/79	All Power Reactor Operating facilities and all utilities having a CP
79-19	Loose Locking Devices on Ingersoll-Rand Pumps	9/13/79	All Power Reactor Operating facilities and all utilities having a CP
79-18	Proper Installation of Target Rock Safety-Relief Valves	9/10/79	All Power Reactor Licensees with a CP and/or OL
79-17	Contact Problem in SB-12 Switches on General Electric Company Metalclad Circuit Breakers	8/14/79	All Power Reactor Licensees with a CP and/or OL
79-16	Excessive Radiation Exposures To Members Of The General Public And A Radiographer	8/16/79	All Radiography Licensees
79-15 (Correc- tion)	Bursting of High Pressure Hose and Malfunction of Relief Valve "O" Ring in Certain Self-Contained Breathing Apparatus	8/22/79	All Research Reactors
79-15	Bursting of High Pressure Hose and Malfunction of Relief Valve "O" Ring in Certain Self-Contained Breathing Apparatus	8/8/79	All Materials Priority I, Fuel Cycle and Operating Power Reactor Licensees
79-14	Unauthorized Procurement and Distribution of XE-133	7/13/79	All Medical Licensees except Teletherapy Medical Licensees and to all Radiopharmaceutical Suppliers

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LAST SIX MONTHS

Circular No.	Subject	Date of Issue	Issued to
79-13	Replacement of Diesel Fire Pump Starting Contactors	7/13/79	All Power Reactor Operating Facilities and all Utilities having a CP
79-12	Potential Diesel Generator Turbocharger Problem	6/28/79	All Power Reactors Operating Facilities and all Utilities having a CP
79-11	Design/Construction Interface Problem	6/27/79	All Applicants for, and Holders of Power Reactor CPs
79-10	Pipefittings Manufactured from Unacceptable Material	6/26/79	All Power Reactor Licensees with a CP and/or OL
79-09	Occurrences of Split or Punctured Regulator Diaphragms In Certain Self Contained Breathing Apparatus	6/22/79	All Materials Priority I, Fuel Cycle and Operating Reactor Licensees
79-08	Attempted Extortion - Low Enriched Uranium	5/18/79	All Fuel Facilities Licensed by NRC
79-07	Unexpected Speed Increase of Reactor Recirculation MG Set Resulted in Reactor Power Increase	5/2/79	All Holders of BWR OL's or CP's
79-06	Failure to Use Syringe and Bottle Shields in Nuclear Medicine	4/19/79	All Holders of Medical Licensees except teletherapy licensees