

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

July 13, 1979

IE Circular No. 79-13

REPLACEMENT OF DIESEL FIRE PUMP STARTING CONTACTORS

Description of Circumstances:

On May 28, 1978, the Diesel Fire Pump failed to start remotely at Davis-Besse, Unit 1 facility operated by Toledo Edison Company. The cause for failure was defective starting contactors. A subsequent investigation into the cause of a similar failure on January 18, 1978, at Commonwealth Edison Company's Dresden 2/3 Diesel Fire Pump identified a generic problem with Cummins Industrial Fire Pump Engines.

Discussion:

The investigation revealed that Cummins Engine Company issued a Service/Parts Topics No. 74T 13-3A announcing new components available for Industrial Fire Pumps (NH-220-1F, N-855-F, N-855-F1, NT-855-F2 series engines) to improve operation of inline 6 cylinder Industrial Fire Pump Engines. In this topic, Cummins recommends that when replacing the 118848 magnetic switch and 199573 DC relay contactor, use the new 217588 magnetic switch. The new design component has a 6 ampere draw whereas the old combination has approximately 3 amperes draw. Davis Besse and Dresden sites have implemented the corrective action recommended by Cummins.

Recommended Actions for Licensees' Consideration:

All holders of operating licenses or construction permits should be aware of the potential problem of the type discussed above. Because of the generic implications in this matter, it is recommended that both licensees of operating facilities and holders of construction permits conduct a review to determine if the above diesel fire pump engines are in use or planned for use at your facility(ies). If these engines are in use or planned for use, determine if the Cummins type 118848 Magnetic Switch and 199573 DC relay contactors are also employed. For those engines which have these components, develop a program for their replacement with the new 217588 Magnetic Switch.

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

Enclosure:

Cummins Service/Parts Topics
No. 74 T 13-3A

7907190 128

Service/Parts Topics

Note: This topic re-issued to add Caution regarding checking Controller Relay for current draw when installing magnetic switches. Please destroy copy dated April.

December, 1974

No. 74T 13-3A

File Group 13

Ref.: (B) Inline Card E9,
Group 13.01.2, P/C1

New Components Available For Industrial Fire Pumps (NH-220-1F, N-855-F, NT-855-F1, and NT-855-F2 Series Engines)

A new high pressure fuel pump shut-off valve Part No. 216930, Fig. 1, (optional field replacement) and magnetic switch Part No. 217588, Fig. 2, have been released to improve operation of inline 6 cylinder Industrial Fire Pump engines.

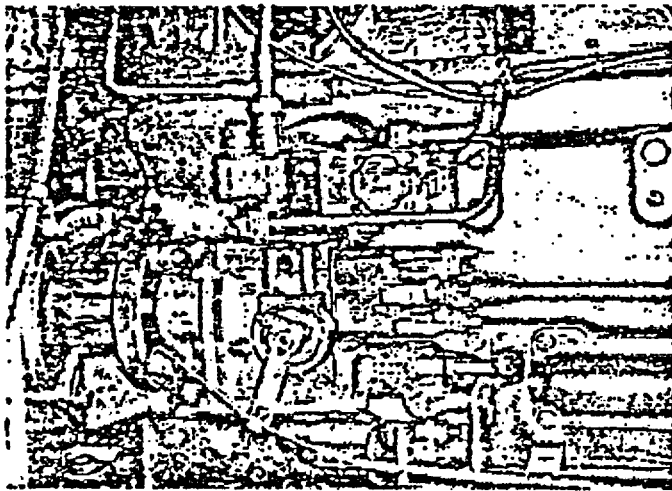


Fig. 1. Fuel Pump Shut-off valve

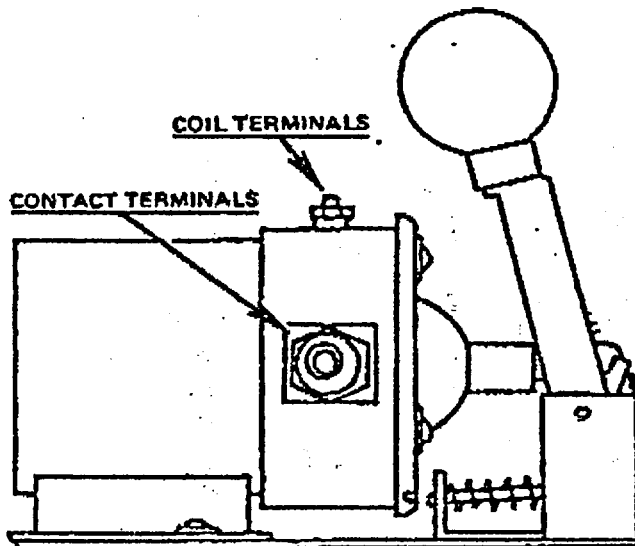


Fig. 2 Magnetic Switch

When replacing 118848 Magnetic Switch, 199573 DC Relay Contactor and 212461 Wiring Harness in the field they should be replaced with new design components.

Caution: When replacing 118848 Magnetic Switch and 199573 DC Relay Contactor with 217588 Magnetic Switch always check the controller relay for maximum current draw. The new 217588 Magnetic Switch has a 6 ampere draw whereas the old combination has approximately 3 amperes draw. Where necessary the controller relay can usually be replaced. Contact local controller representative.

A new wiring harness, AR-12498, which includes two (2) Part No. 217588 Magnetic Switches, wiring harness and mounting hardware must be used when making conversion.

Installation Instructions

1. Remove wire harness connecting terminal block, ammeter, magnetic switches and voltage regulator or alternator.
2. Remove magnetic switch and DC relay.
3. Install 211088 Bracket to cylinder block above cranking motor.
4. Install two (2) 217588 Magnetic Switches opposite each other with manual start handles in "up" position.
5. Install new wiring harness as follows: Replace wires No. 2, 6, 8, 9, 10 and 11 on terminal block, No. 13 on ammeter and No's. 2 and 13 on voltage regulator. See wiring diagram, Fig. 3.

A placard, Cummins Fire Pump Engines Initial Start-Up and Operation Instructions, containing initial start-up, normal operation, instructions and a maintenance schedule covering all models of Cummins Industrial Fire Pump Engines is now available and may be ordered as Bulletin No. 3379004-00 from Literature Control Service, 2811 Waterson Trail, Jeffersontown, Ky. 40299, P.O. Box 99000.

Cummins Cummins Engine Company, Inc., Columbus, Indiana U.S.A. 47201
Cummins Engine Company, Ltd., Darlington, Co. Durham, England DL1-4BW
Registered Office: Coombe House, St. George's Square, New Malden, Surrey KT3 4ND Registration No. 573451 England

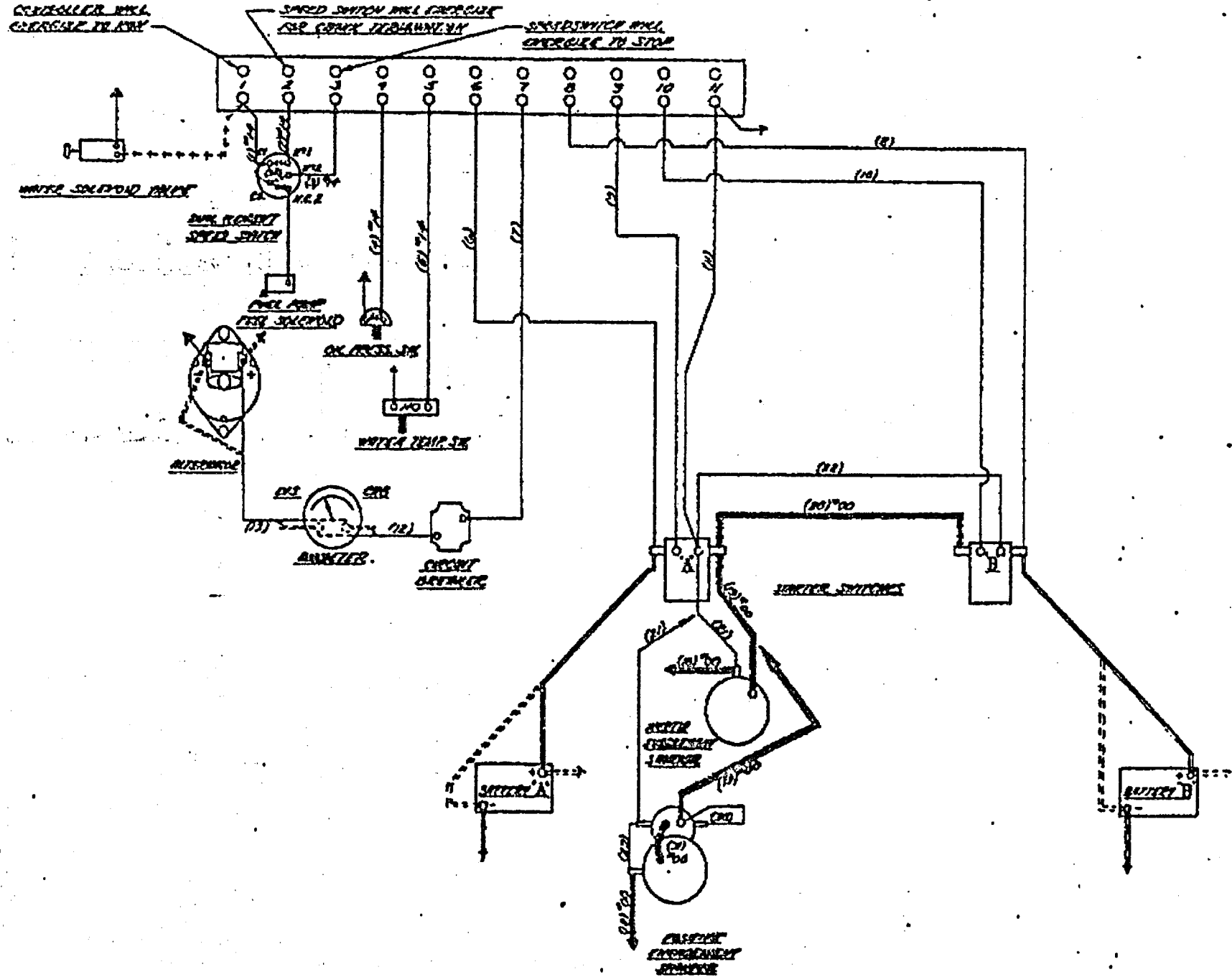


Fig. 1. Wiring diagram

LISTING OF IE CIRCULARS ISSUED IN
LAST TWELVE MONTHS

Circular No.	Subject	Date of Issue	Issued To
78-13	Inoperability of Multiple Service Water Pumps	7/10/78	All Holders of Reactor OLs and CPs except for plants located in: AL, AK, CA, FL, GA, LA, MS, SC
78-14	HPCI Turbine Reversing Chamber Hold Down Bolting	7/12/78	All Holders of BWR OLs or CPs for plants with a HPCI Terry Turbine excepting Duane Arnold and Monticello
78-15	Checkvalves Fail to Close In Vertical Position	7/20/78	All Holders of Reactor OLs or CPs
78-16	Limatorque Valve Actuators	7/26/78	All Holders of Reactor OLs or CPs
78-17	Inadequate Guard Training/Qualification and Falsified Training Records	10/13/78	All Holders of and applicants for Reactor OLs
78-18	UL Fire Test	11/6/78	All Holders of Reactor OLs or CPs
78-19	Manual Override (Bypass) of Safety Actuation Signals	12/28/78	All Holders of CPs
79-01	Administration of Unauthorized Byproduct Material to Humans	1/12/79	All Holders of Licensees except Teletherapy Medical Licensees and each Radiopharmaceutical Suppliers
79-02	Failure of 120 Volt Vital AC Power Supplies	2/16/79	All Holders of Reactor OLs and CPs
79-03	Inadequate Guard Training-Qualification and Falsified Training Records	2/23/79	All Holders of and applicants for Special Nuclear Material Licenses in Safeguards Group I

LISTING OF IE CIRCULARS ISSUED IN
LAST TWELVE MONTHS

Circular No.	Subject	Date of Issue	Issued To
79-04	Loose Locking Nut On Limitorque Valve Operators	3/16/79	All Holders of Reactor OLs or CPs
79-05	Moisture Leakage In Stranded Wire Conductors	3/20/79	All Holders of Reactor OLs or CPs
79-06	Failure to Use Syringe and Battle Shields in Nuclear Medicine	4/19/79	All Holders of Medical Licenses except teletherapy licensees
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
79-08	Attempted Extortion - Low Enriched Uranium	5/18/79	All Fuel Facilities Licensed by NRC
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
79-10	Pipefittings Manufactured from Unacceptable Material	6/26/79	All Power Reactor Licensees with a CP and/or OL
79-11	Design/Construction Interface Problem	6/27/79	All Applicants for, and Holders of Power Reactor CPs
79-12	Potential Diesel Generator Turbocharger Problem	6/28/79	All Power Reactor Operating Facilities and all Utilities having a CP