

INSTALLATION ERRORS THAT COULD PREVENT CLOSING OF FIRE DOORS

During a quality assurance audit, Georgia Power Company personnel discovered three types of installation errors on sliding fire door closers at the Hatch Nuclear Station that could have prevented the functioning of the doors.

The mechanism involved are D and H Pyromatic door closers manufactured by Mesker (see attached drawing). Each unit is powered by a suspended weight which rotates a pulley arrangement to draw the fire door closed. Closure is normally prevented by a fuse link cord which acts through a lever arm. This device, called the "fuse link anchor hook," prevents rotation of the pulleys, unless the fuse links are severed by fire.

The first improper installation was the replacement of the combustible fuse cords by "S-Hook" type chain. The replacement was necessary due to random failures of the original fuse link cord. However, the cord (or chain) passes through an opening in the case containing the mechanism, and the S links tended to spring open and catch on the edges of this opening. This problem was aggravated in some instances by the lack of guide bushings which are normally installed to facilitate the passage of the chain through the opening.

Another error discovered was the mispositioning of the fuse link anchor hook. Following severance of the fuse link, the pulleys rotate clockwise and a correctly installed anchor hook is rotated through an angle that permits the terminal eye on the end of the fuse link cord to fall free. This prevents the cord (or chain) and the remains of the fuse link assembly from becoming entangled in the rotating mechanism. However, some anchor hooks were found to be installed with the curved section extending to the left (relative to the front view shown). This position can cause the terminal eye to remain hooked during rotation, instead of falling free. These errors actually caused the jamming of fire door closers during tests that followed their discovery.

The corrective actions were to replace the "S" type chain with flat sash chain, install the missing bushings and to correctly orient the fuse link anchor hooks.

Dupe
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It is recommended that all holders of reactor operating licenses and construction permits determine if any fire door closers of this type are installed in their facility(ies). If this is the case, it should be verified that they are installed in accordance with the manufacturer's design and that improper installations, such as described herein, do not exist.

This circular is being distributed for information, and no reply is requested. If you require any additional information regarding this matter, please contact the director of this NRC Regional Office.

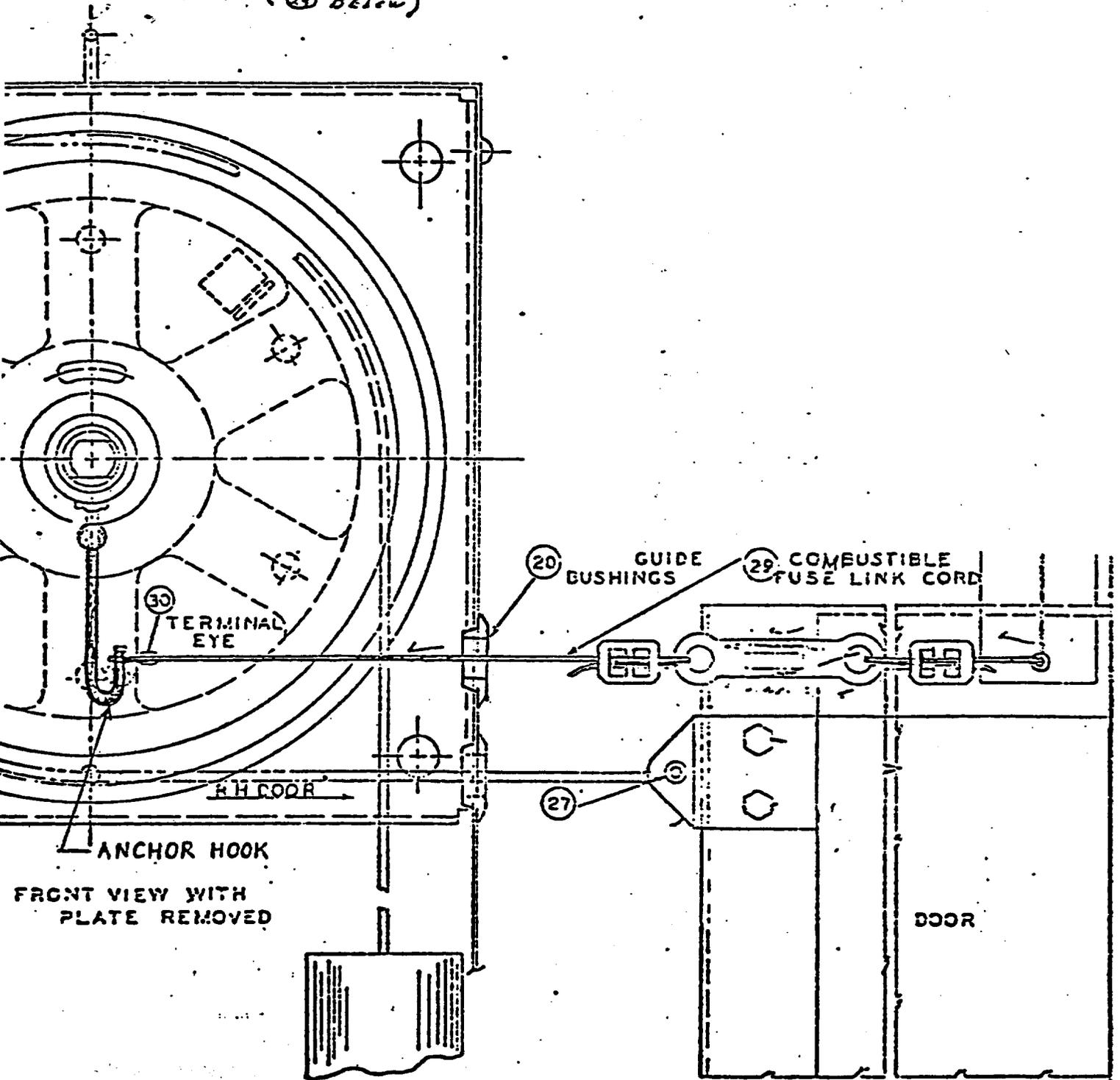
Attachment: Drawing

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LISTING OF IE CIRCULAR ISSUED IN 1978

Circular No.	Subject	First Date of Issue	Issued To
78-01	Loss of Well Logging Source	4/5/78	All Holders of Well Logging Source Licenses
78-02	Proper Lubricating Oil for Terry Turbines	4/19/78	All Holders of Reactor Operating Licenses or Construction Permits
78-03	Packaging Greater Than Type A Quantities of Few Specific Activity Radioactive Material for Transport	5/16/78	All Holders of Reactor Operator Licenses, Construction Permits, Fuel Cycle, Priority I Material and Waste Disposal Licenses

CORD WAS REPLACED WITH SASH
 CHAIN BECAUSE OF RECENT FAILURES
 OF THE COMBUSTIBLE FUSE LINK
 CORD. (SEE BELOW)



APPROVED		SCALE	FINISH
ENGINEER			
CHECKED		HARDWARE	INSTALLATION
DRAWN	DWM 3-25-41		
D.&H. PYROMATIC DOOR CLOSER		R-4174	FIG. 2-A
TITLE		DWG. NO.	507
MESKER		6002 N. LINDBERGH HAZELWOOD, MO.	