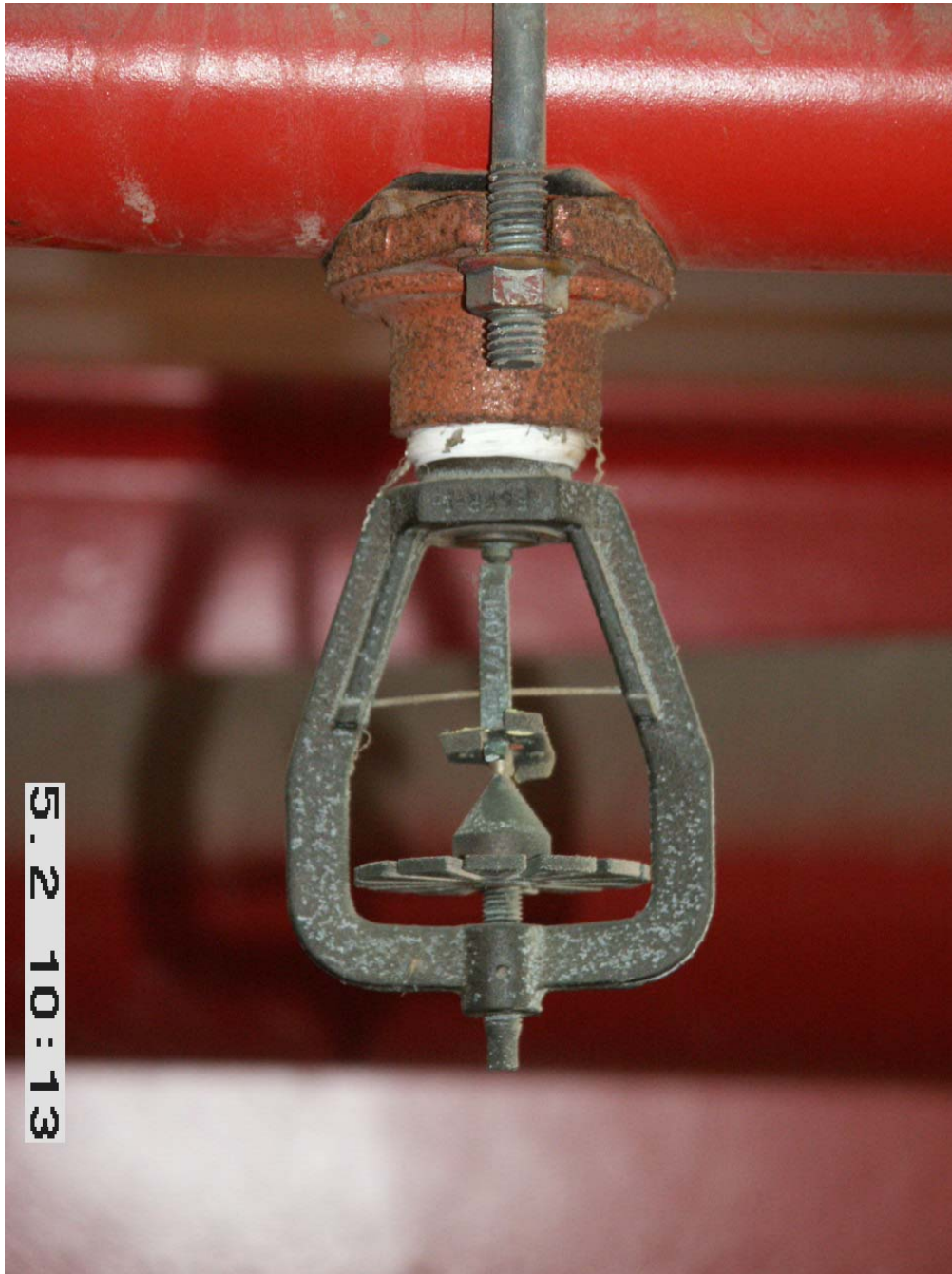


Date: 16/05/03  
Ref: ESFR-160503E

## **ESFR FAILURE INVESTIGATION**

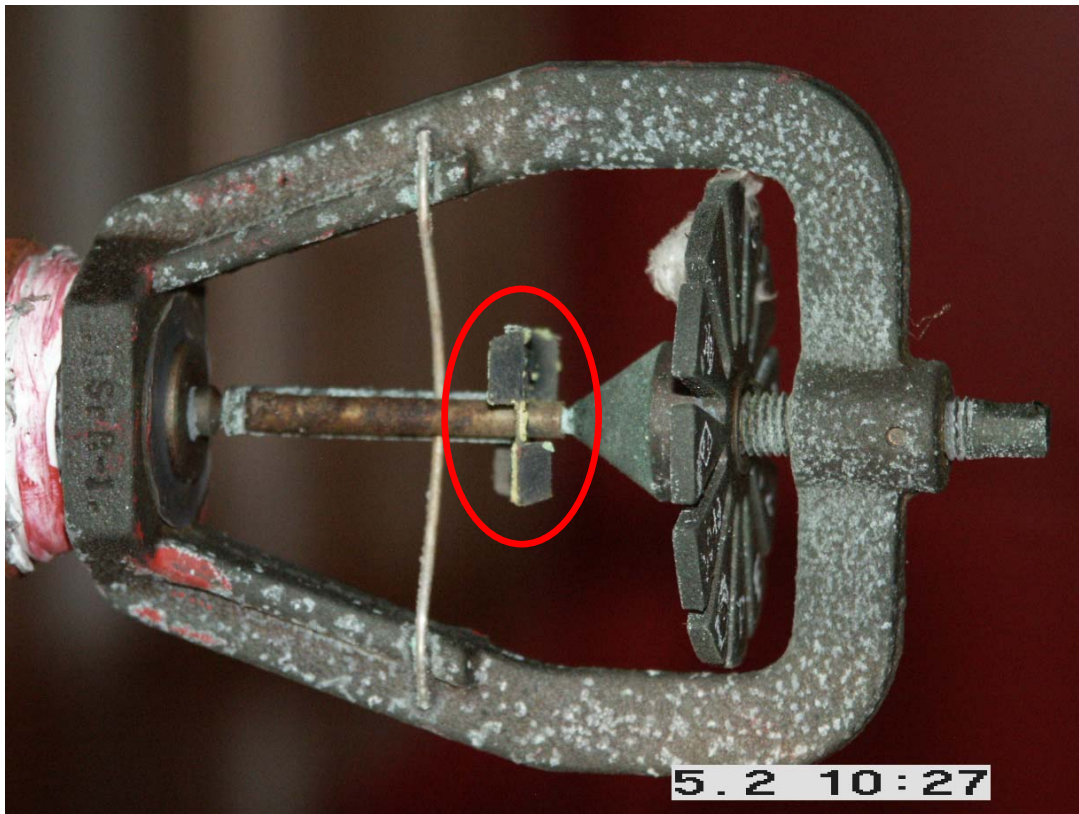


A Central's ESFR - 14 1997 lot is subject to significant corrosion.

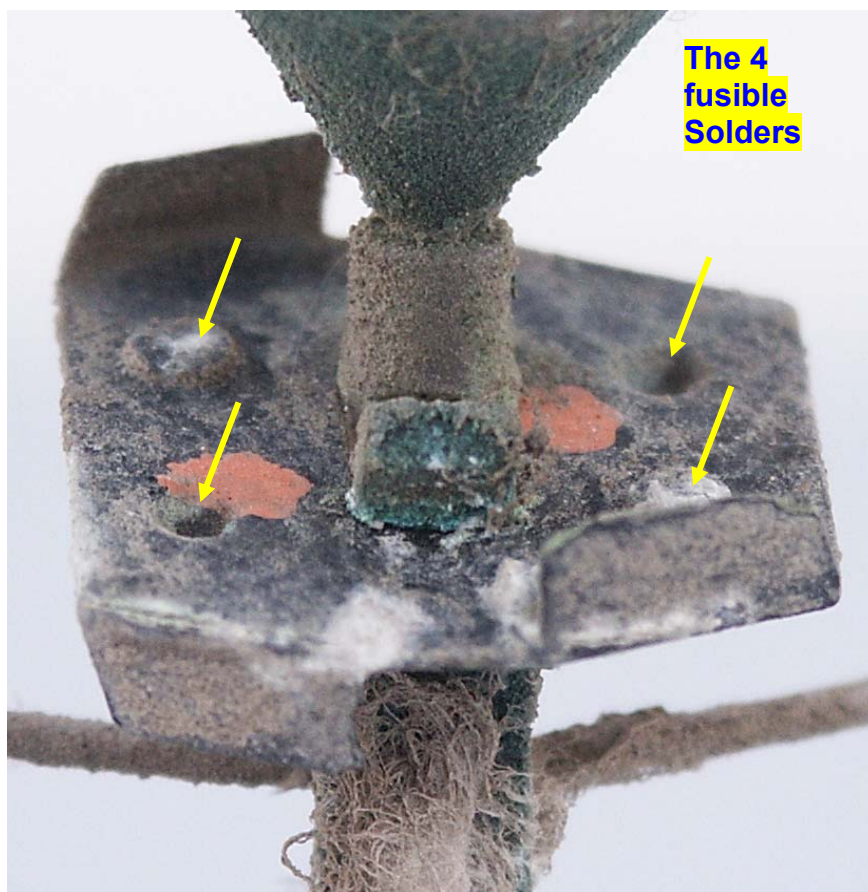
The plant is located about 300m from the Sea Shore.

The building contains chemicals within close containers.

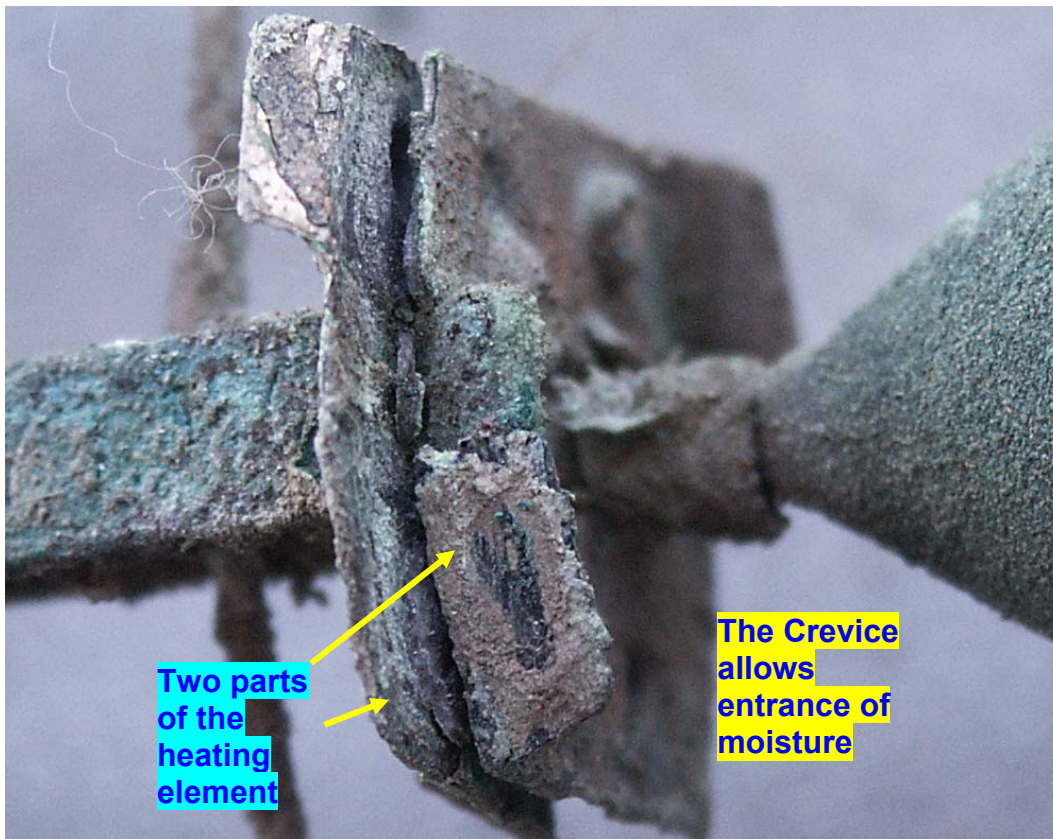
The building is well ventilated



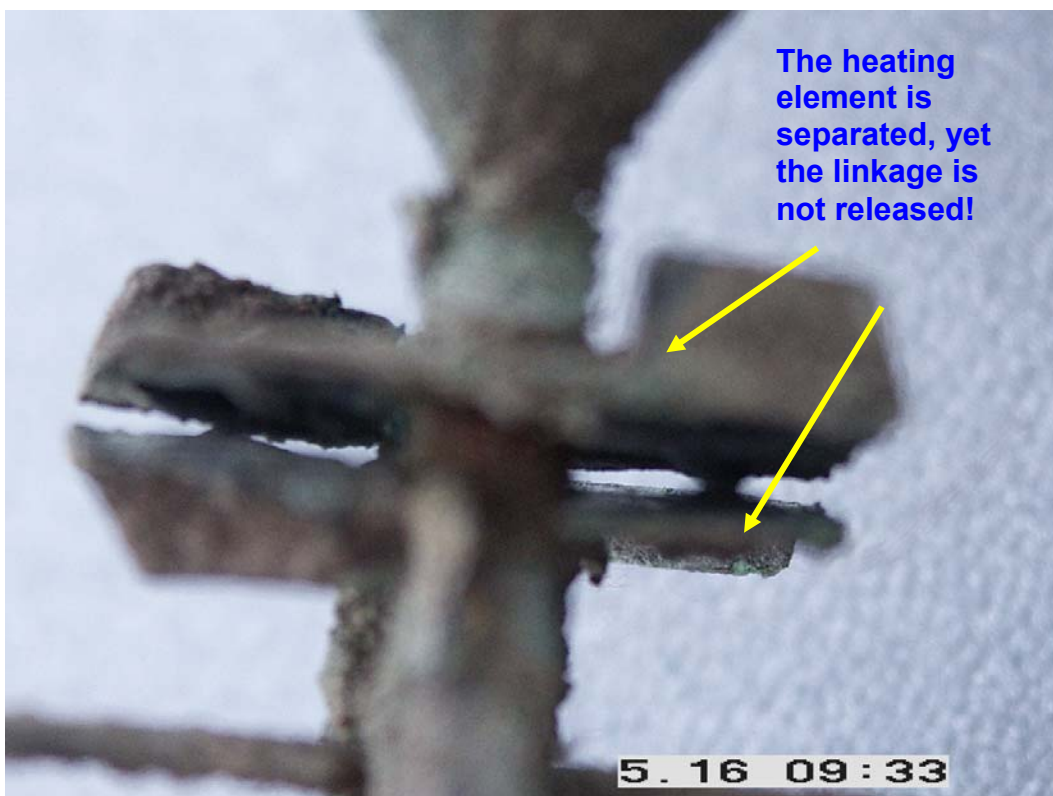
**The Fusible Heating Element is shown within a "red circle"**

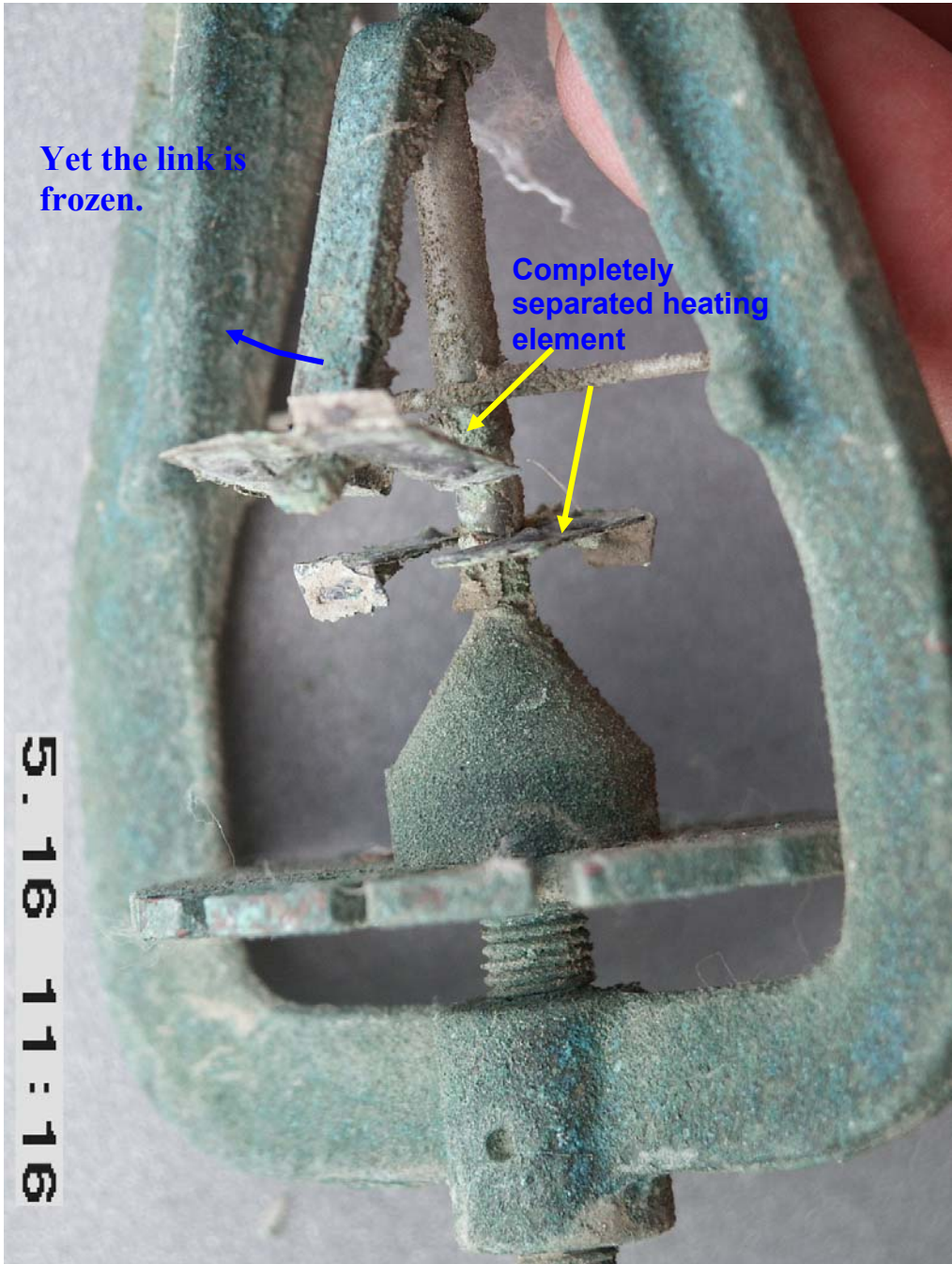


**The heating element is composed from 2 copper made pieces soldered in 4 positions. The Temp. rating is 71°C**



The two parts of the heating elements are easily separated due to failures of the solders. Crevice corrosion is suspected.



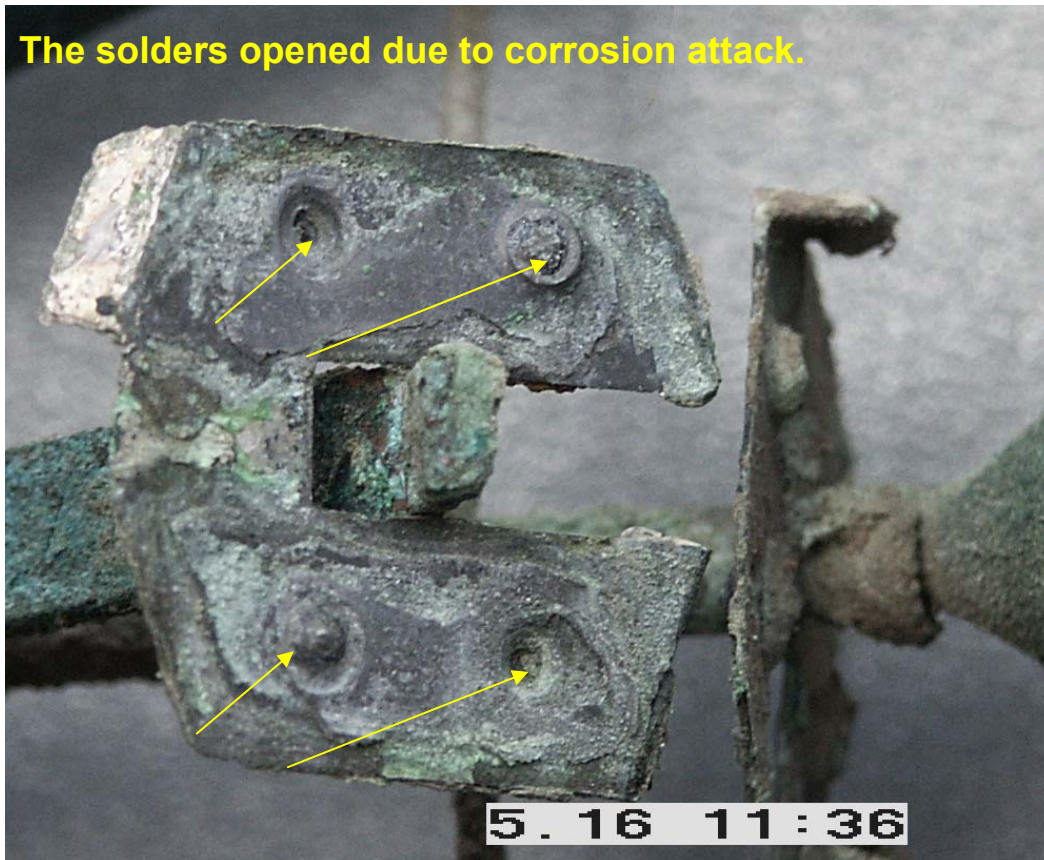


**Not only the heating element disintegrated, the normal operation of the sprinkler is inhibited!**



**The sprinkler is shown from a different angle. The link is still frozen.**

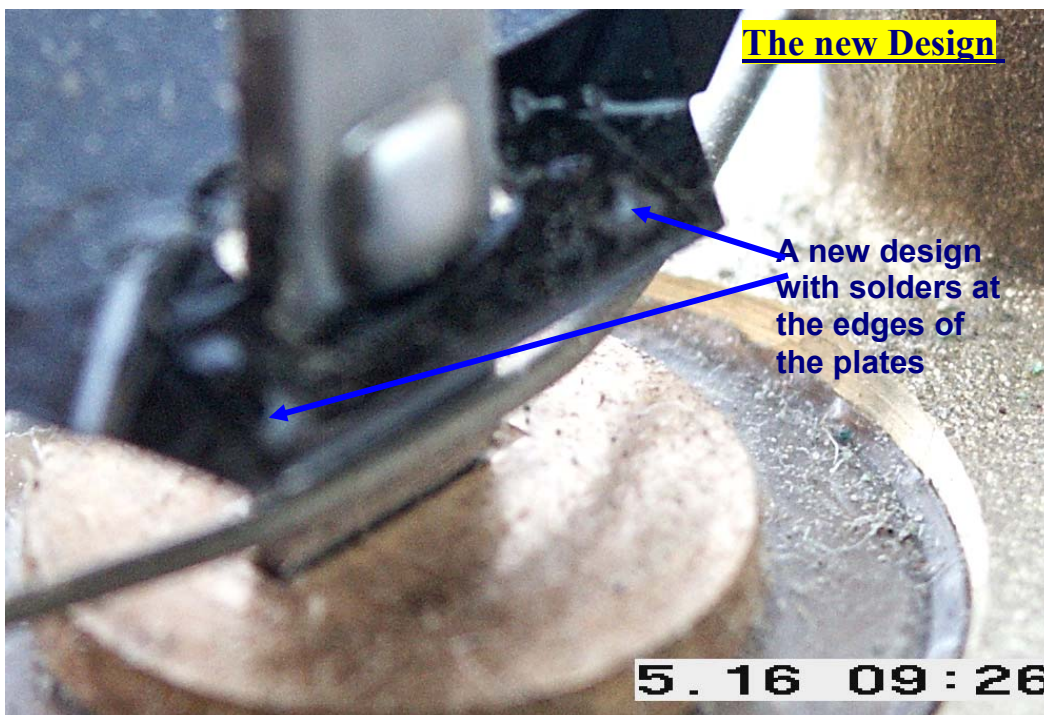
**The solders opened due to corrosion attack.**



**The Heating Element:**

The location of the solders is towards the center of the plates.

**In the new design** (see photo below) the solders are located toward the edges closing better the gap between the plates.



**The new Design**

A new design with solders at the edges of the plates

The problem is detected in a sample of any 6 heads dismantled from the building ceiling.

The linkage of the 7<sup>th</sup> head initiated during dismantling.