



RADIO-OPERATED CRANE - UNCONTROLLED MOVEMENT

INCIDENT

A radio-controlled over-head electric travelling crane was being used to lift parts of a 'floats' screen during night-time at a treatment plant. The crane's radio-transmitter was turned on to switch overhead lighting, and then left unattended while the load was being 'slung' from the auxiliary hoist lifting hook. Without any operator activation or warning the hoist began to simultaneously 'raise' and 'long-travel' until the load became 'snagged' and stopped on overload protection. No injuries were sustained.

CAUSES

When tested at the manufacturer's works the fault conditions were intermittently reproduced by moderately impacting the radio-transmitter against a workbench. The equipment enclosure was cracked and had allowed the ingress of dust and moisture. An internal examination did not reveal any specific electronic component failure, but did show corrosion at certain connections that could cause such a fault to occur. The transmitter functioned normally when re-assembled after routine servicing.

COMMENTS AND PREVENTATIVE ACTION

The potential for serious injury (or worse) is apparent.

The incident supports a clear need to ensure that the controls for a radio-operated crane are effectively isolated prior to 'slinging' a load, and that they remain isolated until movement is required and deliberately initiated. The equipment involved had a removable key specifically provided for this purpose.

Under no circumstances should any radio-control device be switched on and left unattended. The effects of this incident may have been avoided or lessened had a person been present at the control unit and quickly operated the radio-transmitter emergency-stop.

The general condition of the radio-transmitter evidenced rough use (or abuse) that directly contributed to the incident, and pre-start checking of the equipment should have withdrawn the transmitter from use until checked and repaired.

The radio-control system was 11 years old. This incident demonstrates the need for such equipment to be periodically returned to the manufacturer for integrity testing of vital safeguards, and to facilitate any necessary upgrading for compliance with current specifications.

Radio-controls are not recommended for use with a suspended man-cage.

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