STAY LIVE
Electrical Industry Health & Safety Group

Shared Learning

Li-Ion Battery Fire – Portable Grinder

Li-Ion Battery Fire – Portable Grinder	Hydro Scheme

What happened?

After cutting some steel on a penstock using a Hitachi battery grinder the grinder, spare battery and accessories were packed back into a tool bag, in the back of a ute. Several k's down the road a smell of smoke prompted the driver to pull over who then discovered the tool bag on fire. The fire was put out.

On inspection it looked like the first battery used (which was now loose in the bag) had self ignited and burnt the bag and its contents. On closer inspection it appeared that the possible cause was an internal short/damage of one of the battery cells rather than an external short across the battery terminals.
The site also has additional spare batteries of varying ages due to the accumulation of batteries which are kept when replacement tools have been purchased.

What did we learn?

Spontaneous fires of Li-Ion tool batteries is a known risk due to damage of the battery / internal cells or accidental overcharging. Seen also during a recent incident where a port company's electrical workshop was burnt down due to a fire cause by either a faulty Li-Ion battery or battery charger.

When working with Li-Ion portable power tools (or other equipment) remember to:

- Visually check for damage to the battery case before and after use.
- Store Li-Ion batteries securely. Ensure they are protected from damage.
- Remove old batteries from service (typical usable life for standard Li-Ion tool batteries is 3 years).
- Do not leave Li-Ion batteries on charge after they are fully recharged.