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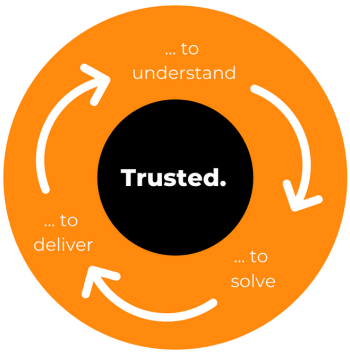
Dry Cooler Repair Case Study



...to Understand

- A request was received for urgent assistance to assess & remedy leakages in a bank of dry air adiabatic coolers.
- The customer was appreciative that we were able to commit to a next-day site visit.
- Visual inspection of 3 large coolers, each 6.5m in length, 3m in width and 2.4m high revealed multiple pipework fractures in each of the 18 coil sections.
- The extensive nature of the pipework fracturing was indicative of internal liquid freezing.
- Discussions with the operations team revealed that pure water ran through the cooler tubes and because a glycol additive could not be utilized, an alternative automated frost protection control measure was in place. Examination confirmed that this had failed.
- It was strongly suspected by the visual damage to the outside of the coils that this would be replicated throughout the units and that on-site repairs were not feasible.

...to Solve

- The 3 large 2.5 tonne units were uplifted and transported to the Turnbull & Scott manufacturing facility in Hawick.
- The 12 fans on each unit were carefully removed to gain access to the damaged coils which were then stripped down revealing the full extent of the damage.
- It was confirmed at this stage that due to the extensive damage, all 6 heat exchanger coils in each of the 3 coolers would need to be replaced.
- The design engineers and operations team carefully measured every aspect of each CuAl coil from the fin lengths and spacings to the headers, casing components and the Cu manifolds.
- Autocad design drawings were created for the coils, pipework and manifolds and subsequently approved for manufacture.

...to Deliver

- The manufacture and testing of 18 coils and connection manifolds was undertaken.
- The coils were re-installed and connected up with the manifolds and finally the fans were put in place and connected to in full communication with the control panels.
- The units were shipped back to the distillery for re-installation by the on-site engineering team.
- .....but the job was not quite done! It was realised that during the period of disconnection the on-site connecting pipework had sagged and new manifolds were urgently required to complete the installation.
- Turnbull & Scott engineers were on site within hours and measured up. Within a working day transition pieces were manufactured and delivered....now the job was finally done.

"I was very grateful for the quick response time from Turnbull & Scott and the pleased with the service we got. Based on our experience, we will look to work together again in the future."

DISTILLERY GENERAL MANAGER