### **Pressure System Integrity Inspection**

## Owners and operators of refrigeration plant are legally responsible for safety and regulatory compliance

Take the Pressure System Integrity Inspection test to check your refrigeration plant is compliant. You must answer yes to all items on the checklist to comply Do I meet the inspection Does my WSE (Written Do my inspections comply requirements of EN378? Scheme of Examination) with the requirement of include piping inspections? **PUWER?** Does my current inspector have sufficient Do my current inspections provide knowledge of refrigeration systems? an up-to-date assessment for condition of piping, vessels and insulation? Are my refrigeration systems safe and legal? Do my inspections comply Does the WSE state the system's with the requirement of Maximum Allowable PSSR? Pressures? Does my latest inspection Is my WSE for the Has potential corrosion state that my refrigeration complete system and not under pipe insulation system is safe to just individual vessels? been assessed? operate today?

#### Star Technical Solutions (STS) – The Refrigeration Regulatory Compliance Experts

Pressure System Integrity Inspections carried out by STS will provide a legally compliant Written Scheme of Examination (WSE) and Inspection that will fulfil the compliance requirements of PSSR and PUWER. Our experience suggests many inspections focus on PSSR requirements and the dangers associated with pressure release. The Pressure System Integrity Inspection incorporates inspection of piping and equipment as required by PUWER. PUWER focuses on the inspection requirement where a refrigerant leak may result in an explosive or toxic atmosphere. The Pressure System Integrity Inspection will satisfy the following regulatory and industry best practice:

- Pressure System Safety Regulations (PSSR)
- Provision and Use of Work Equipment Regulations (PUWER)
- EN378 Parts 1-4: Refrigeration and Heat Pumps, safety & environmental requirements

Our WSE will detail the inspection requirements for both vessels and piping. Our inspection will state what was inspected during the examination and the result of the inspection. We always inspect bare pipe and bare vessels at each inspection. We assess Corrosion Under Insulation (CUI) using the recommended guideline for Risk Based Inspection (RBI) from the UK Health and Safety Executive. As part of this RBI approach we inspect for signs of insulation failure.

On completion, we will provide a combined WSE and inspection document with a list of actions required. We will state that your refrigeration system is safe to operate and what actions need to be taken to meet current legislation.







#### **Star Technical Solutions**

Star Technical Solutions (STS) is the technical advisory service of Star Refrigeration. STS operates independently of the rest of the business and its purpose is to provide expert, impartial and independent advice to owners and users of cooling plant and their associated systems. Our innovative, flexible and creative attitude helps to ensure our clients reach their goals effectively.



STS provides support to clients in all stages of their projects and in various market sectors. We offer a range of services, including:

#### **Regulatory Compliance**

- Pressure System Integrity Inspection
- Ammonia Hazard Assessment
- HFO Hazard Assessment
- HFC Hazard Assessment
- Principal Designer for refrigeration type projects
- HAZOPs

#### **Refrigeration System Design**

- Selecting compressor packs, air cooler, condenser, and all other equipment
- Pressure vessel sizing and connection layout
- Prepare refrigerant P&ID's Diagram of Connections
- Bills of materials
- Equipment layout drawings
- Electrical and control specifications
- Electrical drawings

## Training

• Manager level – Ammonia awareness training

Supporting the Project

Refrigeration tender specification

Insulated envelope tender specification

Tender review and contractor interview

Review of contractor's design and installation

Commissioning review and snagging review

Feasibility studies

during project

- Manager level HFC Legislative Compliance
- Engineer level Ammonia system training and competency assessment – at client's site
- Engineers level NH<sub>3</sub>/CO<sub>2</sub> system training and competency assessment – at client's site
- Permit to work for refrigeration systems

#### **Energy Audits and Management**

- Refrigeration system energy audit as required by ESOS
- Ethos data monitoring with energy usage alert (identifies efficiency problems and can save significantly in electricity consumption)

#### **Other Related Services**

- Troubleshooting of refrigeration systems
- Refrigeration equipment condition audit
- 5-year maintenance plans and maintenance specification
- Legal technical support and expert witness

# **Ethos Plant Optimisation and Energy Management**

- Energy management
- Load assessment
- Troubleshooting
- Heat metering
- Benchmarking

