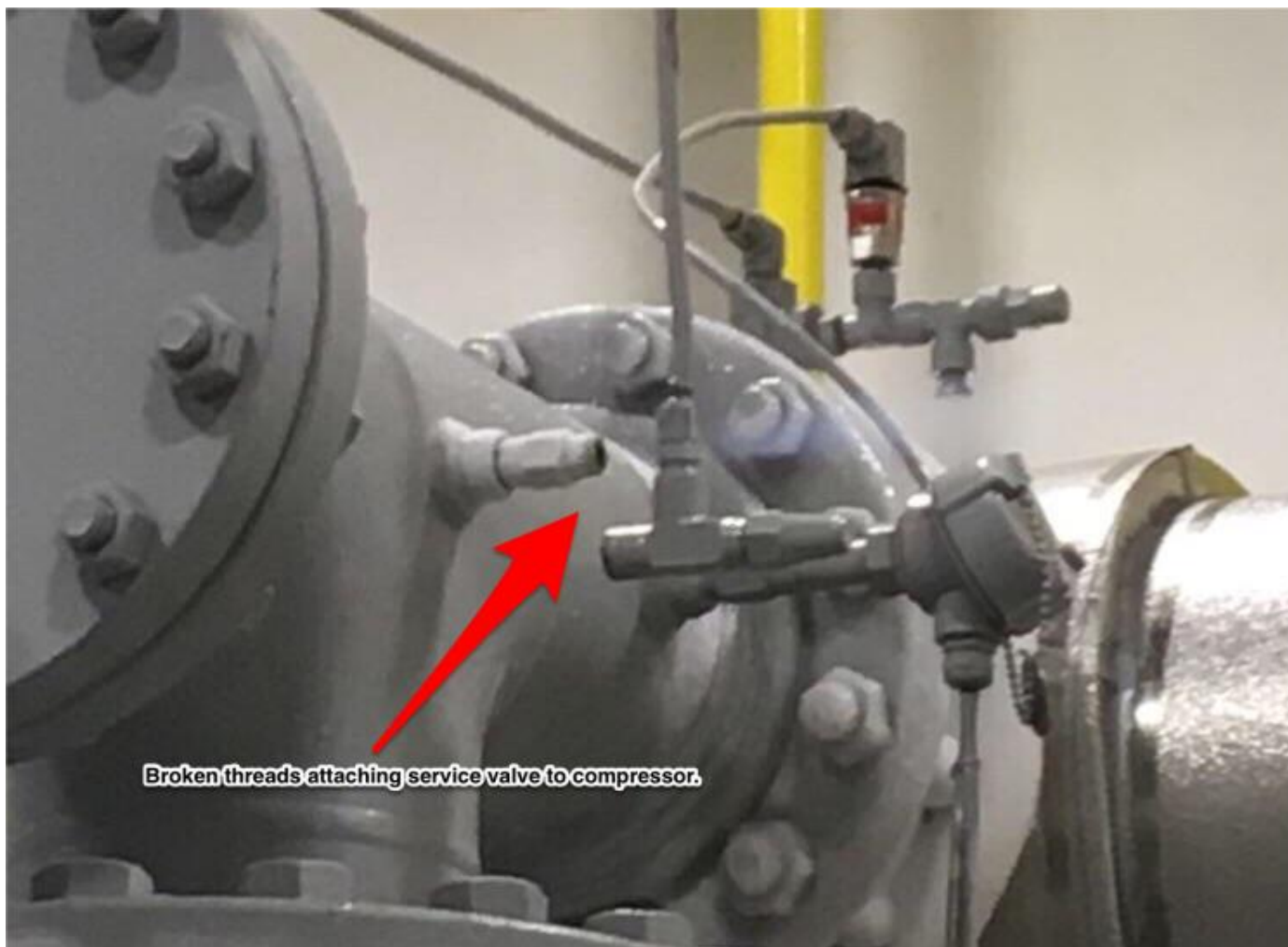
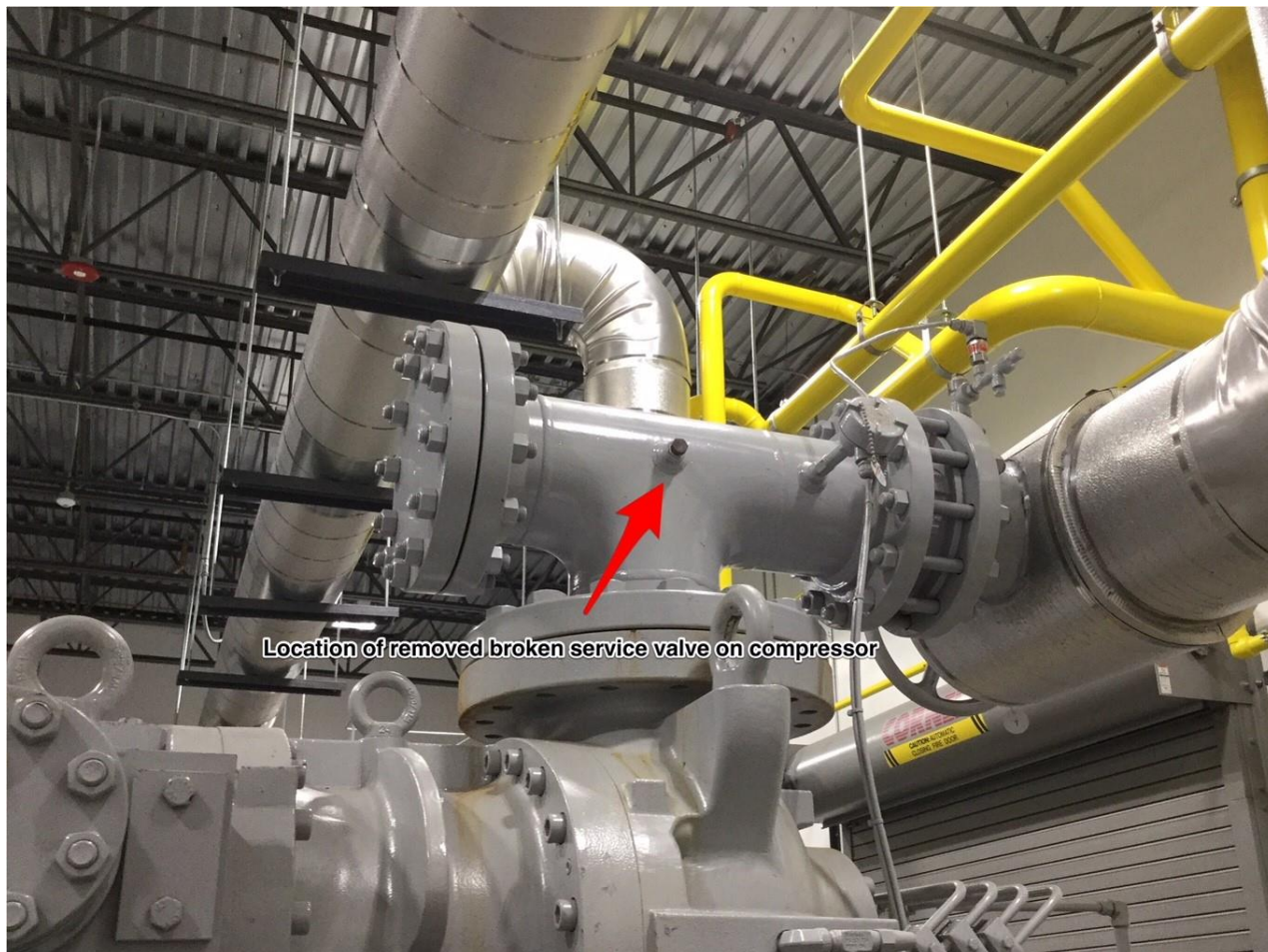


## Incident Summary (Posse file#5620262)

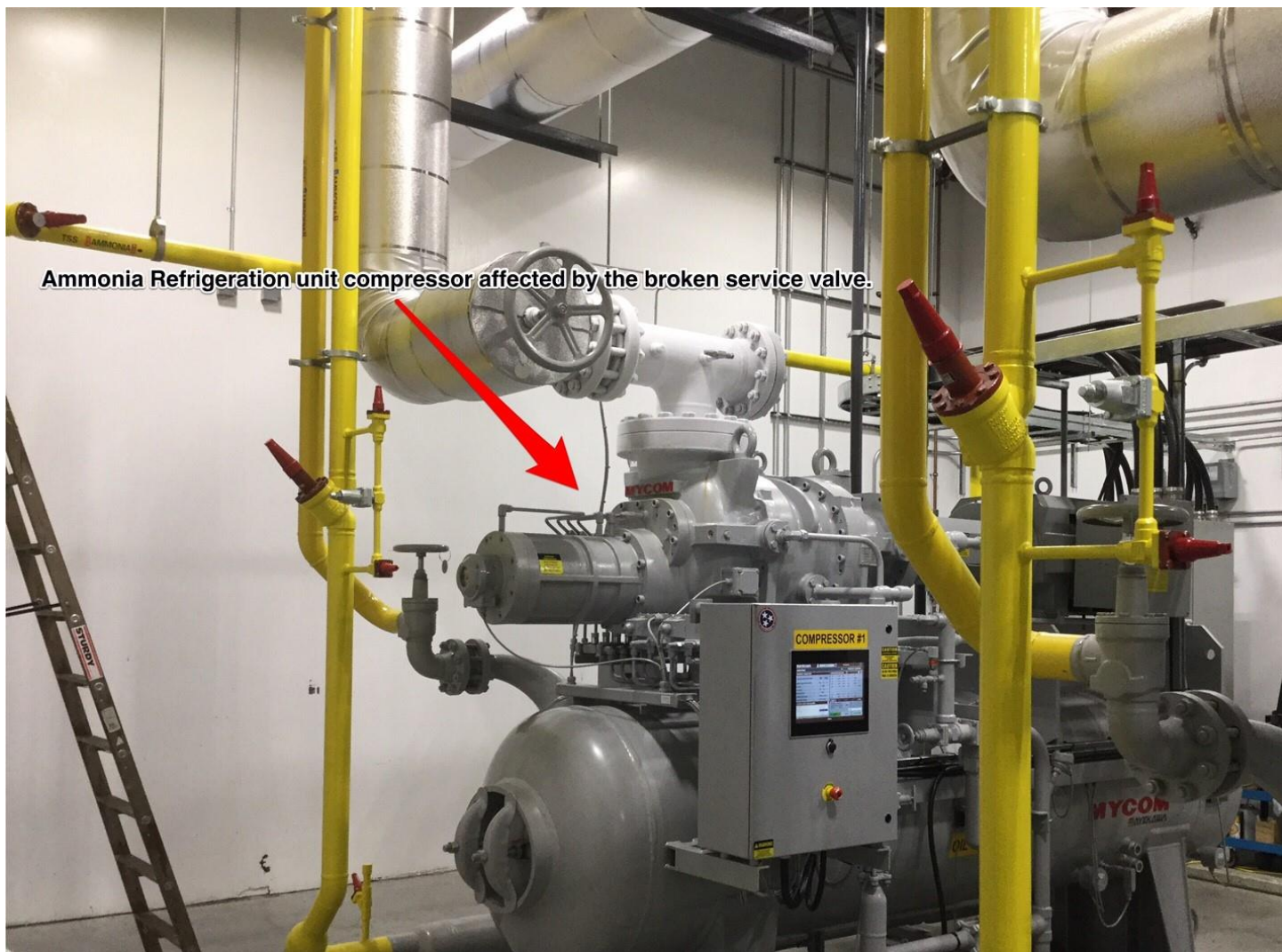
SUPPORTING INFORMATION	Incident Date		August 14, 2017	
	Location		Chilliwack, BC	
	Regulated industry sector		Boilers, PV & Refrigeration – Refrigeration system.	
	Impact	Injury	Qty injuries	None.
			Injury description	None
			Injury rating	None.
	Damage		Damage description	Broken ½” Service Valve installation threads on Ammonia Refrigeration Compressor.
			Damage rating	Minor.
	Incident rating		Minor.	
	Incident overview		½” Service Valve installation threads broke on Ammonia Refrigeration Compressor, causing oil and some ammonia to leak from the broken threaded area of the Service Valve into the machinery room.	
INVESTIGATION CONCLUSIONS	Site, system and components		<p>The refrigeration system circulates ammonia from compressors, which makes the gas hot and raises its pressure, enabling it to hold larger amounts of heat. The condenser which is installed outside of the building changes the gas to a liquid, allowing it to lose its heat in the process, while the expansion device turns the liquid back into a cold gas, releasing most of the heat it held while circulating thru other components on the system.</p> <p>The ½” service valve in question is installed on a portion of the compressor piping that operates in vacuum while the compressor is running, the valve is intended for bypassing a check valve during compressor servicing.</p>	
	Failure scenario(s)		The threads of a ½” Service Valve on the piping of the Compressor of a New Ammonia Refrigeration Plant, cracked apart and released Oil and some Ammonia into the Mechanical Room. System shutdown was initiated once a leak was detected.	
	Facts and evidence		<p>Broken threads on a ½” Service Valve, see attached picture provided from the Licensed Contractor that was called in to repair the issue, the system was shut down by the attending Chief Engineer of the plant.</p> <p>The Licensed Contractor stated there has never been an issue with these types of valves, and possibly the threads were damaged during shipping of the new compressor to the plant or during construction.</p>	
	Causes and contributing factors		It is highly probable, that the broken threads of the ½” Service Valve on the compressor caused the leakage.	



Broken threads attaching service valve to compressor.



Location of removed broken service valve on compressor



Ammonia Refrigeration unit compressor affected by the broken service valve.