Incident Summary (152869272-001 #) (5613345)

SUPPORTING INFORMATION	Incident Date			March 16, 2017
	Location			Duncan
	Regulated industry sector			Electrical
	Impact	Injury	Qty injuries	0
			Injury description	NA
			Injury rating	NA
		Damage	Damage description	Fire damage to furnace firebox, venting and electrical wiring.
			Damage rating	Minor
	Incident rating			Minor
	Incident overview			Poor electrical connection and improper wiring methods caused the electrical termination in the furnace to overheat causing a fire.
INVESTIGATION CONCLUSIONS	Site, system and components			Furnace manufactures specify the types of wire to be used, generally copper only. Aluminum wire is only to be connected to devices specifically approved for aluminum connections, by devices specifically approved for aluminum terminations. The wire nuts used were rated “copper only”. The main overcurrent protection is a 15amp Federal Pioneer Breaker, installed in a Federal Pioneer 100A combination panel.
	Failure scenario(s)			House originally wired with aluminum wire. New high efficiency furnace installed approximately 4 years ago. The furnace was fed with aluminum wire and terminated with copper only wire nuts. This connection oxidized over time leading to a break down in the connection causing excessive heat. This connection eventually got hot enough to melt the insulation off of the conductor which caused arcing and the subsequent fire. The owners were home at the time were able to quickly extinguish the fire.
	Facts and evidence			Photos, witness statements.
	Causes and contributing factors			The fire was caused by the improper use of aluminum conductors.