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FMMO SAFE PRODUCTION STANDARDS – ESSENTIAL ELEMENTS

Safe Production Standards establish the minimum requirements all branch operational controls must comply with. The information contained on this form covers critical elements of a safe production standard focused on fatal risk management, repetitive injury prevention and newly established critical requirements in which the general workforce may be unfamiliar with. If there are questions regarding this or another Safe Production Standard contact your supervisor or area safety representative.

TITLE	2.10 Lightning Standard	
PURPOSE	Establishes minimum requirements for protecting personnel from lightning risks using prudent judgment and a branch lightning detection system.	
CRITICAL ELEMENTS	The Standard defines High Risk Lightning Areas and asks that each division determine which activities, tasks or areas are at an increased risk of exposure to lightning (An optional Appendix document has been created to help division personnel document this information / Divisional HIRA matrices may also be used to document High Risk Lightning Areas)	
	High Risk Areas and Activities – Lightning Events	
	<i>Task or Area</i>	<i>Department</i>
	i.e. Overhead Crane Operation (Ball Mill Lifts)	Mill Maintenance
	<i>Control Measures</i>	
	Administrative control restricting lifting of a ball mill when in Red Alert, primary/auxiliary braking system on crane, properly rated rigging equipment and inspection.	
	Enhanced Lightning Detection / Monitoring System	
	<ul style="list-style-type: none"> Two additional Electric Field Mill Sensors (EFMS) have been installed on the processing side to help more accurately identify hazardous lightning activity across the branch. The lightning detection system is monitored by the command center dispatcher (for mining areas) and the powerhouse operator (for processing areas). Radio broadcasts will be disseminated across the branch by the security department and command center. The System requires a Pre-use Inspection and routine PM 	
	The standard defines three different alert types (Green, Yellow & Red) and the minimum requirements that must be adhered to for High Risk Lightning Areas when in the Red Alert. Due to the difference in surface area between the mine and processing sides the Red Alert radius is different	
	<ul style="list-style-type: none"> Processing Area: Red Alert zone is established at a 0 to 4 mile radius Mine Area: Red Alert zone is established at a 0 to 7 mile radius 	
	If lightning activity is not detected by a lightning detection system, and lightning activity is prevalent, reasonable judgment must be made to ensure employees are safe.	

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<p>CRITICAL ACTIONS REQUIRED</p>	<ol style="list-style-type: none"> 1. Management is responsible for developing a list of high risk lightning areas and activities that will require immediate actions during specified lightning alert conditions. In addition, management shall determine the method of effectively communicating lightning alert status within each division. 2. Dispatchers need to be trained in using and inspecting the lightning detection system (MIS Department responsibility for initial user training). In addition all potentially affected FMI employees shall be made aware of the revised process and the High Risk activities and/or areas they are exposed to. 3. An inspection and PM processes (Command Center and Power House Locations) needs to be established.
<p>CRITICAL LESSONS</p>	<p>MSHA Fatal gram: Over a hundred people die each year from lightning strikes. Recently a coal-barge loader was fatally injured when he was struck by lightning. He was located approximately 200 feet, from a river bank when a dark cloud came over a nearby hill. Workers nearby observed the victim being struck by a bolt of lightning before any rain fell.</p> <div style="display: flex; justify-content: space-around;">   </div> <p>According to the Weather Channel website, lightning strikes the earth an estimated 100 times per second and there are as many as 20 million cloud-to-ground strikes in the U.S. per year (http://www.weather.com/outlook/wxready/articles/id-47). Lightning can reach over 5 miles in length, can reach a temperature of approximately 50,000° F, and can contain over 100 million volts.</p> <p>High Risk Lightning Areas: As used in this standard, refers to Identified areas or activities where the existence of lightning clearly poses greater than normal hazards. Examples include, but are not limited to, blasting zones, conveyor towers, rooftops, work in elevated mining locations, substations, storage areas for flammable/combustible material, and work involving cranes/mobile personnel platforms.</p> <p>Know the High Risk Lightning Areas and Activities associated with your job assignment. If lightning activity is not detected by a lightning detection system, and lightning activity is prevalent, reasonable judgment must be made to ensure employees are safe.</p>