FREEPORT-McMoRan

SAFETY ALERT NOTIFICATION		Safety Alert #	SA – 2017 - 9
		IMS #	77255
		OPERATION:	Chino Hydromet
	**Chino EW Electric Shock**	INCIDENT DATE:	5/21/2017
		TIME:	16:00
		TYPE:	Injury
Issued By: **Rex Burgener**		Contact For Additional Details: **Rex Burgener**	

This is NOT an investigation report. It is a NOTIFICATION of a Significant Incident that has taken place at a Freeport-McMoRan location. The information below is a preliminary assessment and not a formal investigation.

INCIDENT DESCRIPTION

On May 21st, two employees were assigned to patch and replace broken boards on cell 106 in the East electrowinning tankhouse. Cells 102,104 and 106 were jumpered, drained and the cathodes and anodes were removed with the exception of one anode being left at the inlet end of each cell. The employees outfitted themselves in the recommended PPE and entered the EW basement. The employees recognized that there was electrolyte in the work area due to a leak in cell 112, three cells to the East of the work zone. The entire area was thoroughly washed down and a plastic mat approximately 38" square and 11/16" thick was placed on the floor to work off of. Employee one laid down on the mat and removed a broken board from cell 106. He then continued to use his feet to push up on the existing boards and his hands to insert a replacement board. As employee one touched both sides of the bottom of the cell he felt a shock on his left elbow and below his right wrist simultaneously. The employee stopped, removed himself from the work area, told the second employee he had been shocked and they both left the area and shared the event with their relief supervisor. EMT's were called and the employee was taken for medical evaluation.

Current measurements were conducted throughout the work zone and readings from 1 mA to <20 mA were detected

FATAL RISKS	HEALTH AND SAFETY POLICIES
Contact with Electricity	Choose an item.
Choose an item.	Choose an item.
Choose an item.	Choose an item.

OTHER SIGNFICANT RISK (specific to site or task not categorized as global)

PROBABLE DIRECT CAUSES

- Failure to recognize that a chemical suit can allow current to pass through it.
- Failure to recognize that the leaking cell near the area could introduce stray current to the work zone.
- Failure to recognize that the orphan anode left in the cells could potentially introduce current to the work zone.
- Failure to recognize that the plastic mat placed in the work area did not provide sufficient isolation from potential stray current sources.

IMMEDIATE CORRECTIVE ACTION(S)

- Suspended work under EW cell line
- Consulted with subject matter experts
- Eliminated use of Gore Fabric chemical suits (red chemical suits)
- Performed electrical testing throughout in incident area.

REQUIRED ACTIONS(S)

- Determine appropriate PPE for this activity.
- Perform stray current testing after setting of the jumper frame in all areas work will be performed.
- Update SOP's with new requirements with emphasis on PPE and stray current verifications.
- Evaluate task with SME experts.
- Provide additional isolation tools between floor and personnel. Examples: thicker plastic boards or sheets or plastic creepers.
- Evaluate alternative tools to lift boards into place in the bottom of the cell
- Evaluate alternative to boards supporting the bottom of the EW cells.
- Evaluate alternative cell bottom material or alternative cell material. Example: polymer concrete cells

This is NOT an investigation report. It is a NOTIFICATION of a Significant Incident that has taken place at a Freeport-McMoRan operation and is being communicated to enhance safety awareness should a similar situation exist. The information above is a preliminary assessment of the event and is not a formal investigation.