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## **Restarting Frozen Aluminum Pots with Cold Metal Method (Case Study:D20 Tehcnology in South Hormoz Alumiuim)**

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**Abstract:** Primary aluminium producers must have an emergency programme to deal with all kinds of power failures. Such situations can occur without warning and a power failure of more than a few hours may severely damage prebaked anode potlines. Most power outages are not that dramatic, but it is necessary to have worked out emergency programmes and have foremen and operators drilled in these. Temporary shut-downs of potlines or groups of pots may also be caused by seasonal power shortages, economic considerations or industrial disputes. All shutdowns may result in some irreversible damage to the pots and will likely reduce pot life. Power outage may be partial or total, planned or unplanned. Time is an important parameter. Total loss of power for half an hour due to change of cathodes or minor repairs are no problem. Stop for two to four hours are manageable while five hours or more causes large problems with loss of cell life. This method for the first time was used in the Iran country for South Hormoz Aluminium aluminum electrolysis cells with 20anodes technology. This method is very useful for electrochemical cells removed from the circuit during operation, and would reduce the cost of production. First, the current was reduced to 5 kA, and about 6 tons of molten electrolytes were added to the electrochemical cell. The electrolyte height reached about 28 centimetres and then at the current of 5 KA, the plates were removed. Due to the melting of the metal, the resistance decreased. Next, we added sodium carbonate, and at the same time, we measured the distribution of anodic current and drop of clamps. Since, this method did not require relining (metal discharge and anode replacement); it was effective in reducing the costs of aluminium metal production.

**Keywords:** “restarting Frozen Aluminium Pot; Cold Metal Method”