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MELTING OF ZIRCALOY 4 SCRAPS IN A LABORATORY VAR FURNACE

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The melting process in VAR furnaces places interesting and important challenges to the industry. One of these challenges is the use of electrodes with densities very close to the bulk material. In order to melt electrodes made of Zircaloy 4 scraps with low densities in relation to the bulk material, a special device was developed to allow the use of electrodes with cross sections bigger than the ingot cross section. This is desirable in order to obtain the highest resulting melted ingot mass, i.e., to maximize the amount of scraps to be melted. Zircalloy electrodes were melt with the IPEN laboratory VAR furnace, producing massive ingots with densities close to the bulk material density. These ingots were then welded together to be used in a secondary melting to obtain larger ingots following the Vacuum Arc Remelting process.