Page 8 - Regarding the Coke Ovens
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reason for existence. Anything else, any by-product, is incidental. About 40% of the gas we extract is used to heat the coke ovens--that's where they get their heat from, their own gas. (The gas that comes off goes right back to the ov? en?) Yes. It is used to continue the heat? ing process. When we built the new plant (1949) , we used gas from the old plant to get it heated up--till it got hot enough to put coal in it. Then it becomes self- supporting. If we hadn't had gas, we would have had to heat it some way--wood fires or propane or some other way. You heat your oven up just once in its life--then you operate it till it's finished. You nev? er shut it down till it's worn out. (How long might its life be?) Well, the present battery was built in 1949. It was heated up in 1949. (And it has never cooled down?) That's right. (And it runs itself by the gases that come off the coal.) That's right, (Coal goes in, the oven is sealed) and the gas, the volatile is driven off, under pressure so you don't get danger of fire in there that could cause an explo- sion--big extractors draw the gas away from the ovens. Tar is a by-product. It precipitates out at atmospheric tempera? tures, so that's easy to extract. Then you cool the gas, wash and treat it--send it through an oil tower where the light oil in the gas is absorbed. Then after that, you're through with it. You send it back to the ovens a fuel, and the balance is boosted to the steel mills for use in the mills. You bring the new coke oven up to tempera? ture- -that takes anywhere from 7 to 9 weeks to heat it up originally. We start with the ovens themselves, until the tem? perature of the brick is such that it's incandescent and will light the gas, Then we go into the flues. It's safe to go into the flues then because if it doesn't ig? nite, it's going to build up a pocket of gas and explode. You want the gas to light instantly. In 1949 we had a new oven. In? ternally it was all silica brick. And it's surrounded by either metal or clay brick, and it's all held together in a steel gird? like, and that's it. It's built cold, nat? urally, and once it heats, it grows, it gets bigger--and that expansion has got to be controlled. So when they build the thing, to control its expansion, there are certain places they allow to move, and they put what are called slip joints in. Holding it together with springs and wood? en blocks are other means of controlling it until it's fully grown. Because when it's at the heating temperature it's got to be at the right elevation, because you've built a whole lot of sensitive ma? chinery at a certain elevation and it has got to be absolutely true. It heats up and grows longer and wider and higher--gradu? ally heating it up to its proper tempera? ture. (Which produces at the same time a proper size coke oven.) That's right. It has to line up to the pushing machine, a big ram that goes through the oven and pushes the coke out. (You place machinery and build it with the idea it will all line up properly only after it's heated.) That's right. And you prefer it never to cool down. You'd like to operate at a constant temper? ature. But because of the ups and downs of the economy you can't always do that, be? cause you don't always need that much coke or you need more than you can make...so you try to maintain a constant heat--but also you try to heat at what rate the plant is operating. Actually, the coke oven is a battery--a whole lot of ovens. In our plant there are 114 ovens, two batteries. Each oven is a- bout 40 feet long,

average width of 17 inches, about 13 feet high. There are four ports at the top, and a machine goes along with the exact voliome of coal to fill that oven--dump the coal in the ovens and re? place the lids--and depending on what tem? perature you're up to, an3A''here from 17, 18, to 20 hours later, you come back and push that oven--pushing machine comes a- long and pushes the ram through the 40- foot length--coked out. The coke is pushed into the quenching car, After it gets the charge of coke, it goes down to the quench? ing tower and we dump water on it. And that's when you see that plume of steam go? ing up over Sydney. When the ram comes back, we put the doors back on, do any cleaning up that's needed--and then the (8)