

Illinois Power Company  
Docket 50-461



# PHOENIX STEEL CORPORATION

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CLAYMONT, DELAWARE 19703  
(302) 798-1411  
TELEX 83-5416

November 12, 1984

Mr. Paul Courtland  
Nuclear Regulatory Commission  
Engineering & General Communications Branch  
Office of Inspection and Enforcement  
Washington, D.C. 20555

Dear Paul:

Reference the two 15" x 15" x 1/2" carbon steel samples received 11/9/84 as shipped to me by Baldwin Associates, P.O. Box 306, Clinton, Illinois 61727, and identified as 12949A and 12949B.

We have completely analyzed these two pieces and find the following:

## Mechanical Properties

	<u>Yield, psi</u>	<u>Tensile, psi</u>	<u>Elongation, 8"</u>
12949A	30,800 32,400	45,900 44,000	38% 38%
12949B	38,100 38,400	49,700 48,500	27.5% 24%

The two tests were run at 90° to each other and parallel to the cut edges of the sample. A standard flat strap tensile test was used.

## Chemistry

	<u>C</u>	<u>Mn</u>	<u>P</u>	<u>S</u>	<u>Si</u>	<u>Cu</u>	<u>Ni</u>	<u>Cr</u>	<u>Mo</u>	<u>Al</u>	<u>V</u>	<u>Sn</u>
12949A	.01	.25	.012	.007	.01*	.03	.02	.01	.01	.007	.001*	.008
12949B	.05	.47	.012	.013	.01*	.02	.01	.001	.01	.003	.001*	.006

\*less than

All of the above tests were run as standard producing mill results. No one was told that they were special.

Based on the results reported, the steel was not from the heat 81177-21 sold to Interstate Steel. Also, the material was not produced by Phoenix Steel. This conclusion is based on certain elements in the chemical analysis being much too low for a 100% scrap charge steelmaking shop, which Phoenix is. The material that we tested was probably produced in a hot metal steel mill.

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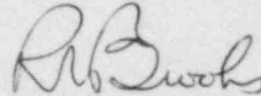
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P. COURTLAND

It is also significant that none of the material met the ASTM A-36 specifications of 36,000 psi minimum yield and 58,000 to 80,000 psi tensile.

It is my conclusion, based on the two samples submitted, that Phoenix Steel is not at fault for the mixed steel. I await your comments.

Sincerely,

PHOENIX STEEL CORPORATION

A handwritten signature in dark ink, appearing to read 'R. Brooks', is written over the typed name.

Robert L. Brooks  
Manager, Quality Assurance

RLB/vh