

# Ruth Engel

## 35-Year Life Member



**Ruth Engel** received her B.S. and master's degrees in geology from the University of Michigan. She has been active in the steel industry since 1979, when she began as an engineer at Armco (now AK Steel). She became a research engineer there in 1983 and was then named a senior process engineer in 1990. In 2004, she joined ANH Refractories (today Harbison-Walker International) as a senior applications specialist focused on the brick market for the production of stainless steels. Since 2006, she has been a consultant to the industry. She has served as a refractory expert witness, carried out quality audits, offered recommendations for better operations and has given many presentations on refractory and steelmaking topics. She has authored numerous technical papers focused on refractories since the 1980s.

*Engel, along with William A. Beltz (left) and Larry G. Evans (right), won the Armco Research Technical Achievement Award in 1997.*

### How did you first hear about ISS and how?

From my first days at Armco Research (1979), I heard/saw/knew about the ISS and its meetings. Planning on who got to go to the next meeting, attend one of the committee meetings and why was freely discussed.

### What was your first level of involvement in the association?

In 1985, the ISS Electric Furnace Division held a special session on horizontal continuous casting, something I was working on at the time. I submitted an abstract for this special session, which was accepted, and I attended my first conference. This started my involvement.

During that conference, I realized that although there were refractory subcommittees in each of the other divisions, the EAF Division did not have one. I invited myself to the EAF Division meeting and suggested to have a refractory session that I would organize. After my presentation, I was denied. Subsequently, it was approved as an ad-hoc committee that was my responsibility. I was given one session. After several years, an active EAF Division member proposed to make the ad-hoc committee a regular committee with members and all the expected responsibilities. Some of its early members were Glenn Carlisle, Gunther Rudolf, Mike Fox and Jeff Smith.

Later on I went through the Division chairs, and in 1994 became chairman,



Engel served as a panelist at the 2018 Secondary Steelmaking Refractories — A Practical Training Seminar (left to right): Tom Connors, Harriet Dutka, Jimmy Barrett, Engel and Rob Doty.

and was also on the ISS board of directors (1994 to 1996).

When AIST was formed, I, along with other refractory people, lobbied the society for the establishment of a refractory committee, and was “stonewalled” for a while, but persistency paid off and it was approved.

### Have you received any honors from AIST (and predecessors)?

In 1991, my co-author and I received Honorable Mention for a paper on ladle sands presented at the Electric Furnace Conference. In general, though, refractories do not get the respect that they should, as shown by the many training seminars that don’t have a section dedicated to them. This sends a strong message that refractories are not important. The two exceptions to this are: the Secondary Steelmaking Refractories training seminar, which started out covering mainly refractories because the people who pushed for its establishment and the early presenters all were in refractories; and the Specialty Alloy training seminar, which has two sections on this topic.

### How has AIST membership benefited you in your career?

Being active in the society has given me the chance to discuss steelmaking

issues, improvements and changes with some of the most knowledgeable people in the field. I can call anybody to discuss issues, and everybody is more than willing to share their knowledge. I have also made many lifelong friends.

### How have you seen the industry change over the years?

Many things have changed: from the use of computer programs that

calculate additions to meet properties (I remember doing calculations using an adding machine), to having equipment that plunges into the melt for consistent temperatures/carbon measurements (how can I fudge the values if I cannot insert the probe into the “proper” place), to new types of refractories and so on. The future will be more and more automated, but we will also lose something: the ability to make steel without computerization. If the system is out of order/fails, we are out of luck.

### What would you say to new graduates who are just coming into the steel industry?

While you can easily see that it is one of the most exciting places to work, most have no idea of how technically challenging it is. It may be dirty at times, noisy, an unpleasant environment, but at the end of the day, the taming of a material at 3,000°F is exhilarating. You can’t ask for anything more exciting. Other metal industries don’t compare. ♦



Engel received the Clarece E. Sims Award from J.M. Svoboda at the Electric Furnace Conference in 1994.