

ORAL HISTORY PROGRAM

Dale E. Heinz: Producing Steel to Help Make a Better World

2020

PREFACE

The following oral history is the result of recorded interviews with Dale Heinz, conducted by Karim Alshurafa on May 9, 2019. This interview is part of the AIME Oral History Program.

ABSTRACT

This oral history interview chronicles Dale E. Heinz's 45-year career in the iron and steel industry. Heinz describes his unexpected transition from studying secondary education to working at Republic Steel, where he advanced from laborer to senior management positions at major integrated steelmaking facilities. He discusses major technical innovations and challenges, including blast furnace relining, high-rate natural gas injection, improved refractory practices, slag splashing, and emerging opportunities to convert plastic waste into blast furnace fuel. Heinz also reflects on workplace safety, organizational change, leadership, and the importance of collaborative problem-solving.

The interview highlights Heinz's extensive involvement with professional organizations, including the Association for Iron and Steel Technology and the American Institute of Mining, Metallurgical, and Petroleum Engineers. He emphasizes the value of professional networks, mentorship, active listening, and continuous learning. Heinz also recounts his volunteer service with the American Heart Association and the Dunes Learning Center. Throughout the interview, he presents technological innovation, meaningful relationships, and developing future professionals as essential to the steel industry's continued success.

Readers are asked to bear in mind that they are reading a transcript of the spoken word, rather than written prose. The following transcript has been reviewed, edited, and approved by the narrator.

TABLE OF CONTENTS

00:15 Introduction

00:47 A Native of Cleveland – Taking an Interest in Iron Production

02:52 Earning Degrees from Bowling Green State University and Baldwin Wallace

03:42 Choosing Iron and Steel: An Appreciation of Engineered Chaos

05:15 Career Influences During the Vietnam War Era

07:24 Republic Steel: The Transition to Management and First Major Project

09:29 Dick Hall – Mentoring a Positive Management Style

11:08 Rising Through the Ranks and Technological Innovations

13:44 Technical Challenges – Slag Splashing, Natural Gas Injection, and Refractory Practices

17:50 Surviving a Furnace Explosion - Repairing a Broken Water Main

21:48 Honors - The J.E. Johnson Jr. and Heart of Gold Awards

24:31 A Defining Moment in the Steel Industry – Significant Changes in Steel Making

26:37 AIME and AIST [ISS] – Developing Connections and Gaining a Wider Viewpoint

30:41 Benefits of Joining a Professional Society – Networking and Teamwork Skills

32:37 Growing the Steel Industry - More than a Rust Belt Business

35:25 Relationships and Problem Solving - The Value of Working in the Steel Industry

36:49 Plastic Injection – Providing a Valuable Alternative to Plastic Waste

00:15 Introduction

Alshurafa:

This is Karim Alshurafa of SMS group Inc. and member of the AIST, Association for Iron and Steel Technology. I'm here at AISTech 2019, in the Westin Hotel, on May 9th, with Dale Heinz, retired ArcelorMittal executive. Dale has been a prominent member of the iron and steel community for over 45 years. We are here today to do an oral history project for the American Institute of Mining, Metallurgical, and Petroleum Engineers. Thank you, Dale, for agreeing to speak with us today and share your experiences.

Heinz:

Thank you, Karim. I'm pleased to be here today.

00:47 A Native of Cleveland – Taking an Interest in Iron Production

Alshurafa:

That's great. Really, I'm excited about this interview, and I can't wait to get into it. Tell me about where you grew up.

Heinz:

Yes, so I was a native of Cleveland, Ohio, and all of my formative years, and until age 50, I spent all of my time in Cleveland, other than going to college for a while. I went away for four years to Bowling Green State University.

Alshurafa:

That's fantastic, and what did your parents do for a living?

Heinz:

Well, my mother was a housewife, although she dabbled in floral arrangements, which was her family's side of the business; she pitched in at their flower shop. My dad, my grandfather, my great grandfather, and my great-great-grandfather were all fire chiefs in the city of Cleveland. I chose a different path at the urging of my father. He wanted me to break the chain.

Alshurafa:

Wow. You really stepped outside of that. Who, or what influenced you to become who you are in the industry today?

Heinz:

Well, I had gone to school to be a school teacher. My degree was in secondary education, and, for a number of different reasons, I chose not to pursue that career path. I applied for a job at Republic Steel

because I needed to work. I needed to earn a living. It took some time for me to grow into appreciating that work, blast furnace work. After I took that interest in iron production, the company was offering some courses. They were all the mill process-related courses from iron making and steel producing, to hot rolling, and cold rolling, and finishing, and coding, and some metallurgical fundamentals. So, in that fashion, I picked up some fundamental engineering skills.

02:52 Earning Degrees from Bowling Green State University and Baldwin Wallace

Alshurafa:

That's fantastic, and what school did you go to?

Heinz:

Yes, I went to Bowling Green State University, which is in western Ohio, just south of Toledo. I later earned an MBA from Baldwin-Wallace College in Berea, Ohio, which is near Cleveland.

Alshurafa:

Oh, that must've been very valuable for you in your career. Why did you choose that school, in particular, in Bowling Green?

Heinz:

Well, my dad chose that school.

Alshurafa:

Okay.

Heinz:

Because that's where he used to go hunting every fall.

Alshurafa:

I guess. What about Baldwin-Wallace College?

Heinz:

The proximity to our home in Cleveland was very convenient, and they had an accelerated program that allowed me to finish that course of study over the course of a couple of years.

03:42 Choosing Iron and Steel: An Appreciation of Engineered Chaos

Alshurafa:

Then, the famous question, why did you choose the field of iron and steel production?

Heinz:

Yes. So, I didn't really choose it, per se. I was finishing school, college. I had decided not to pursue what my degree was in, and I applied to the mill to earn a living. I had met my wife to be. We were going to get married later that year. We were already talking about starting a family. So, I think, in my mind, it was important to have some meaningful work and a regular paycheck coming.

It was only later that I kind of grew into this from the perspective of thinking of it as a career. That came on later. It took quite a few years of learning to appreciate all of what's going on in an integrated steel making facility that results in a gleaming coil of highly engineered steel going out the door to satisfy our customers.

Alshurafa:

And, what was it in the iron steel production that really got you interested in sticking with the industry?

Heinz:

Did you know, there are 2,758 simultaneous chemical and thermal processes taking place inside an iron making blast furnace, most of which are out of control? Now, there's a few we pay really close attention to, but it fascinates me how we can take dirt out of the earth and turn it into liquid hot metal that runs like water.

05:15 Career Influences During the Vietnam War Era

Alshurafa:

It sounds like you found your passion, right there on the spot, huh? Did you have any professors that mentored you in any particular way that may have led to that decision?

Heinz:

Not as it relates to my career in iron and steel. I certainly had some professors that were excellent mentors in terms of life lessons. I had a superintendent or blast furnace manager, probably 10 or 12 years after I started, that was really a good mentor for me in the business and helped me along the way.

Alshurafa:

How about any political or cultural events affecting your studies or?

Heinz:

Yes, I would say, I grew up in the era of the war in Vietnam. I attempted to gain entry to the Naval Academy, but my Congressman nominated me to go to West Point, the United States Army, as a second alternate. So, I thought, well okay, I took a shot at it. I missed. I didn't think much more of it until about a week later. I got a telegram from the Army saying report for your induction physical to enter West Point. At that point, I was not so enthusiastic to join the Army because I had just read an article about an

80% mortality rate for second lieutenants coming out of West Point, and I didn't like the odds. So, I didn't serve at that point.

Alshurafa:

I don't blame you. Those odds don't sound too great. How did you get your first professional job in the industry?

Heinz:

I applied initially for a summer job in the mill, when summer jobs were still available. I don't know I would refer to that as a professional job. I took a brief break after that summer to go back and finish my degree and came back to the mill in the following spring. And, six or eight months later, management approached me to join their management training program. And, that's probably the first time I thought about it as being a possible career.

07:24 Republic Steel: The Transition to Management and First Major Project

Alshurafa:

And, what kind of position did you take in the management program?

Heinz:

Yes, so my first job was as a laborer at the blast furnace, largely consisted of walking around with a shovel and moving piles from one spot to another, loading up wheel barrels, or whatever mess had been made, we got to clean it up.

Alshurafa:

Working through the ranks.

Heinz:

Yes, for sure. From there, I entered into the management training program. Over a number of years, I worked my way through progressively more responsible positions with more people to manage their activity.

Alshurafa:

Was it difficult to transition into that profession?

Heinz:

Yes. Again, I was several years into this before I started to think of it as a career. I was working at a mill, as I said, to earn a living for my wife and me, to start our own new lives together. And, only later did it dawn on me that I really liked what I was doing.

Alshurafa:

And then, it led to many, many years in the industry.

Heinz:

That was about 45 and a half, if I'm counting correctly.

Alshurafa:

Yes. Who's counting? Right. What was your first major project like?

Heinz:

So, the first major project I would make note of; I was the operating liaison with the engineers developing a reline project for C6 blast furnace in Cleveland. And this was a very significant project for us. It was a huge budget. We were changing technologies. We were going from a banded Bosch plate cooled with a low-density cooling configuration to a high-density plate cooled Bosch European technology. That afforded me the opportunity to take several trips to Europe and visit several plants that had state of the art technology and opened my eyes to what was possible as opposed to what was.

09:29 Dick Hall – Mentoring a Positive Management Style

Alshurafa:

That sounds like a wonderful experience. Did you have any influences or mentors during that time?

Heinz:

In the middle '80s, I had a new blast furnace manager come; his name was Dick Hall. He helped me understand that my management style was an appropriate management style. And, in that period of time, we had Theory X, and we had Theory Y managers. The Theory X manager would say, you do what I tell you, and sometimes he had a two by four in his hand. Okay, that's a little hyperbole, but Theory X was my way or the highway. You do what I tell you. You don't need to question why that's done that way. Theory Y was, here's why it's important to do this, and that was more consistent with my way of thinking. It took a greater investment of my time in the individual so that he or she would understand; this is why we do what we do.

Alshurafa:

Did that lead you to anything in your career at that point to have that kind of management style?

Heinz:

Well, it certainly solidified me thinking about this as in terms of a career. I had worked in really a very harsh environment as far as the culture was concerned, and I had thought previously of leaving and starting something else and doing something else. When my management style became affirmed from Dick Hall, this mentor of mine really got me thinking differently about making a career out of it.

11:08 Rising Through the Ranks and Technological Innovations

Alshurafa:

Fantastic. What other positions did you hold within the company?

Heinz:

So, I started as a laborer, moved into management trainee, stock house foreman came next. That was a raw materials handling assignment. From there, I moved over to the furnace and managed the cast house or liquid hot metal casting systems. Moved up to a day position sometime along the way where we had a general foreman's position, kind of ran the operation of the plant. I took a brief break in service from LTV Steel in the middle '90s and moved out to Lorain at a joint venture between the United States Steel and Kobe Steel in Japan. That was all blast furnace work, and that took me from 1973 to about January 10th of 1996, at which point I rejoined LTV Steel in Cleveland. But then, I moved to the steel shop, where I had an assignment there. Ultimately, I became the manager of the steel shop in Cleveland, 1998, and January 2nd of Y2K, after spending the night in the plant for the world's biggest nonevent, I got up on January 2nd, drove to Indiana Harbor, and started my new position there as Division Manager of Iron, Steel, and Logistics. Ultimately, I found my way to Burns Harbor in 2003, where I got the position of Senior Division Manager, Coke, Iron, and Steel Divisions. And, that's where I finished my career late last year.

Alshurafa:

What was your research work/focus throughout that time?

Heinz:

In the late '80s, early '90s, I had the opportunity to collaborate with our researchers on a high natural gas injection practice on one of our blast furnaces, C6, in Cleveland. And, this was pioneering work to this point in time, and we wrote a paper, published it, I presented it at what was then Iron Steel Society, ISS of AIME. And, the paper was recognized, and I won the J.E. Johnson, Jr. Award as a result of that work.

Alshurafa:

That's fantastic. Congratulations.

Heinz:

Thank you.

13:44 Technical Challenges – Slag Splashing, Natural Gas Injection, and Refractory Practices

Alshurafa:

What are some of the biggest technical challenges you experienced in your career?

Heinz:

So, the reline experience where we changed from old technology to high-density plate cooling, this was a big challenge. And, it required all of us to learn a different way to work around the blast furnace. We changed our refractory practices over the course of two decades from primitive clays to sintered material to monolithic poured castable linings in our refractory systems in the cast houses. That was a significant change and took quite a bit of learning what to do and what not to do. So, when I moved from Cleveland to Indiana Harbor, I was changing from plate cooled furnace technology to stave cooled furnace technology. This required me to see things a little bit differently. And, maybe switching to the steel shop now, we learned how to slag splash in the BOF and extend the vessel linings almost indefinitely with that technology. Those were some of the biggest challenges.

Alshurafa:

Well, these are significant contributions and technical challenges that you faced. The slag splashing is, of course, a widely used practice now within BOF steelmaking. And, it does help extend the life throughout multiple shops throughout the world. Are there any technical contributions to the industry that you can share with us?

Heinz:

The natural gas injection practice on the blast furnace in the late '80s and early '90s was really groundbreaking. While it's fairly commonplace now, particularly in the United States, with the advent of fracking and vast quantities of natural gas readily available at low prices. At the time, this hadn't been done before, and we developed the technology to deliver the natural gas for the furnace. Most people today use a lance through the blowpipe to get the gas into the air stream, the wind, if you will, the hot blast. In our case, we developed a poured port through the tuyere itself, and we injected via that. We did not have a lance. We had a pipe connected to the tuyere, and this orifice, if you will, in the tuyere body, was where we injected the gas.

So, we had, I believe, reached rates of 222 pounds per net ton of hot metal, 111 kilos per ton, metric ton. Those were levels unheard of before, and we also discovered that this was a significant productivity boost on the blast furnace. We got a lot more tons out of it. So, not only do we lower our coke rate on the furnace, coke being more expensive than the natural gas, we get the benefit of additional volume throughput from the furnace as well.

I mentioned refractory practices. We had some pretty primitive practices when I first started in the blast furnace with the sand formed runners that would last a cast or two. You'd have to change them to a sintered material that we would stamp into place, and then heat it to the point where it's sintered into a solid form, and then finally pouring castable cement around forms for our refractories in the cast house. We went from having six people required around the clock, 24 hours a day, 365 days a year, to maintain the refractories in the cast house to having two people there around the clock to cast the furnace and a small repair crew that would come in every six weeks and refresh and renew the refractory. So, this was pretty challenging stuff in terms of change. People don't like change; people resist change. Change is difficult, but it made quite a difference in our operation.

17:50 Surviving a Furnace Explosion - Repairing a Broken Water Main

Alshurafa:

Well, both of those seem like a large change, as well as an op-ex [operating expense] savings and a productivity increase, so, as well as yield. Do you recall any significant experiences working with colleagues that you can share?

Heinz:

Yes, I can remember a dramatic breakout that occurred, again on number six furnace, when I was still a relatively young man, and I was relatively new to supervision. We had what we'd call a scab inside the furnace that came loose and came down and knocked 9 of the 18 tuyeres out of position. It raised the liquid level in the hearth of the furnace to the point where the liquid was now coming out of these tuyere openings, and it burned down. It burned, completely evaporated, nine tuyeres, nine tuyere coolers, nine blowpipes, nine blowing stocks, and a pretty violent episode as you might imagine. The rest of the people that were in the furnace area at that time took off running. And, probably a good thing they did because we had water pouring down the floor on top of the cast house runners and creating explosions as the water ran into the torpedo cars and mixed with the liquid iron that was still coming out of the furnace. And, I was in the mud gun room, or the shanty as we called it, and my escape path was cut off, and so everybody there thought I hadn't survived. So, they were calling people from all over saying, I don't think Dale got out of there. And, you know, about a half-hour later when things kind of calmed down, I walked out of there without a scratch. I was glad to go home and hug my kids.

Alshurafa:

That's an incredible experience.

Heinz:

I have another one—this one's actually kind of funny.

Alshurafa:

Yes, I'm ready for that.

Heinz:

All right. So, I'm sitting in my office in the steel shop one day in 1998 or '99, and I get a call from one of the plant engineers, and he says, hey, we got a problem down here just outside your shop at the old open hearth, which they were demolishing. They were in the process of demolishing a hundred-year-old open hearth. That's okay; we'll be right down. I grabbed my maintenance manager from the BOF. We went down there, and they had consulted some prints. And, what they thought to be a dead pipe was actually an active water main. And, the guy with the backhoe went to take the water main out, and he punctured it with a tooth on the backhoe bucket, and he had a geyser that was spraying water about 150 feet in the air washing off this old open-hearth crane that was overhead.

So, they had dug an enormous pit to get access to this pipe, and the pit was filling up with water, and the engineer says, you're going to be down 12 hours. I said, what do you mean I'm going to be down 12 hours? He says, yeah, it would take us about 12 hours, isolate this, fix it, and get you back in business at the BOF. And, I turned to my maintenance manager; I said, have we got enough water to run? He goes, yeah, we got enough water to run. I turned to the engineer, and I said, Come back Tuesday. We're down

Tuesday for 12 hours. And, he said, oh, no, no, no, no, we can't possibly wait till Tuesday. This is Thursday the previous week. We've got to get this job. We've got to take this open-hearth down. I said, I'll tell you what, as soon as our vice president of operations calls me and says it's more important to take down the hundred-year-old open-hearth than it is to make steel today, I'll shut it down. And, he kind of grabbed his chin. He says, yeah, I think we need to pump over here, and another pump over there, and we're going to pump some water over to that sewer.

Alshurafa:

That's when he smarted up. That's a good one.

21:48 Honors - The J.E. Johnson Jr. and Heart of Gold Awards

Alshurafa:

We understand that you've had some awards and honors throughout your career. Could you please elaborate on that?

Heinz:

Yes. The J. E. Johnson Jr. Award was given to me for the natural gas work that we did. It's a creative work in iron making, supposed to go to a younger person less than 40 years old. I just snuck under the wire on that one. But, I was honored to receive that for the work we did in natural gas injection. I was deeply honored to become an honorary member of the American Institute of Mining, Metallurgical, and Petroleum Engineers, or what we use to refer to as AIME. And nobody in our area said A-I-M-E. It was always AMY. We were always going to the AMY meeting. That's the parent organization for AIST.
So, with that award, the honorary membership, I joined a very, really, shortlist of people that are iconic in our industry, and it's really quite humbling for me. And, one that speaks to my community involvement, I received the Heart of Gold Award from the American Heart Association, where I contributed to their fundraising and community outreach programs for over 15 years in Northwest Indiana and the Chicago area.

Alshurafa:

Dale, you mentioned an award for the American Heart Association. Could you care to elaborate on that?

Heinz:

Yes, I got involved with the American Heart Association very early on at Burns Harbor when I got there in 2003. My involvement there led to 15 years of volunteerism, if you will. Five of those 15 years, I was the heart walk Captain, executive heart walk Captain, raising funds for education, outreach, community involvement, teaching people about the risk associated with heart disease and stroke. I also served as the Chairman of the Board for the Midwest Chapter of the American Heart Association for the last five years prior to my retirement.

Heinz:

I guess I would also throw in there that, for five or six years, I sat on the Board for the Dunes Learning Center, the Dunes Environmental Learning Center, located in Porter, Indiana, near Chesterton. This is a wonderful teaching lab for children that may be disadvantaged. They may grow up in the city and never see the forest or never see Lake Michigan and not understand what's going on outside. They would go and spend a week or a weekend in some cabins at the Dunes Environmental Learning Center, and we said, kids need nature and nature needs kids.

24:31 A Defining Moment in the Steel Industry – Significant Changes in Steel Making

Alshurafa:

Well, thank you for sharing that with us. What milestones in the industry do you think had the biggest impact on the industry over the years?

Heinz:

Yes, so I think when I first joined iron making, we were using run-of-mine material or directly out of the mine straight to the blast furnace. It was rich enough in iron ore content to go straight into the process. Those richer iron ore veins played out, and now we're into a lower grade iron ore. They had to be beneficiated, and that required us to develop a pelletizing process. This took place up in the mines in Minnesota, and they would ship the pellets to us. But, this was a completely different kind of material for us to use, and our material handling systems were not really designed to handle it. So, this was a pretty significant change for an integrated steelmaker, I'd say, through the mid to late '70s and early '80s.

I think the point in time when electric steel making surpassed integrated steel makers was a defining moment in our industry, certainly a milestone. The mini mill operations have led the charge, honestly, in innovations ever since. And I think some things that stick with me through each and every one of the import crises, which I've had the opportunity to live through. I see those as transformative events. I don't think we're done with those, even as we speak here. This chronic worldwide overcapacity still exists, and it's as bad today as it's ever been. In this context, I think our current administration is searching for a viable method to deal with this issue in the United States. But, we're still the destination of choice for somebody who's got extra steel somewhere else in the world.

26:37 AIME and AIST [ISS] – Developing Connections and Gaining a Wider Viewpoint

Alshurafa:

Absolutely. When did you first hear about AIME and AIST?

Heinz:

Karim, I'm old enough now that I really don't remember that well. I can remember early on when I first joined the industry that some of the guys that had been around a little bit longer than I would say, hey, there's a dinner meeting tonight, and it would have been either AISE or AIME, ISS, Iron, and Steel Society. And, I would have the opportunity to go and listen to somebody in our interest, our industry, rather, speak on a topic for the evening. It would run the gamut of some technical aspect of how we do

our business to somebody with a macroeconomic viewpoint in the world. I had the privilege of hearing Father Hogan very early on. Impressive man. Really impressive man.

Alshurafa:

Did that influence you to get more involved in the organizations and progress with them over the years?

Heinz:

Yes, not really at that point in time. What that did for me was allowed me to see the value of networking with other people that have similar interests or similar lines of work. There were a lot more of us then, integrated steel producers and blast furnace operators. And, I'd hear stories from guys or gals that came in from out of town that they did things differently than we did. So, that was kind of eye-opening in that way.

It certainly allowed me to have a wider viewpoint of our industry from that point forward. My involvement with the organizations really came along a little bit later. I was assigned to steel-producing in 1996. Among my assignments at the steel-producing shop in Cleveland came an assignment from my manager, Bob McCormick, who said, you are now the Membership Chairman for the Cleveland Chapter of AMY. It was always AMY, and so I didn't really know what that was going to take, but that really started my involvement with the chapter. From there, I grew into more responsible roles within that organization, and, ultimately, became the chapter Chair in Cleveland, prior to my transfer out to Indiana Harbor in 2000. Once I got out to Indiana Harbor in 2000, it wasn't too much later that my telephone was ringing, and the guys in the Midwest Chapter said, hey, we hear you like to participate. And so, I went to a couple of meetings, and ultimately became the chapter Chairman in the Midwest Chapter. I was the chapter Chairman when the merger came about between ISS and AISE and was on the committee that helped us draft our plan for how we go forward. Then, six months later, I went back in as chapter Chairman for the new chapter of the Association for Iron and Steel Technology, Midwest Chapter, Chicago.

It was during this time, the early 2000s, that I was asked to join the Foundation Board of Trustees for the Iron and Steel Society. I stayed on in that role past the merger, and ultimately became the Foundation Board President for the Board of Trustees. Then, just about the time I thought that might be coming to a conclusion, Ron Ashburn in AIST, asked me to become the representative for AIST to the parent organization, the American Institute of Mining, Metallurgical, and Petroleum Engineers. And, I served as President there in the year 2013.

Alshurafa:

It's quite a distinguished career with the AIME and AIST over the years.

Heinz:

Yes. I'm not sure I would refer to it as a career so much as an opportunity to contribute and, certainly, a lot of fun along the way. I've met some magnificent people along the way in those roles.

30:41 Benefits of Joining a Professional Society – Networking and Teamwork Skills

Alshurafa:

Wonderful. How do you see the societies benefiting people in the industry today based on your experience?

Heinz:

So, in my case, it was the value of a network of like-minded individuals who wanted to contribute, people that wanted to make our business better, more efficient, less energy-intensive, et cetera, et cetera. I have a large Rolodex, I guess. I have a large network of like-minded people that I have no hesitation of picking up the phone and calling them and saying, hey, I'm seeing this problem on one of our blast furnaces, or our caster's not behaving, and I don't quite understand what's going on here. And, we can bounce those ideas off each other and problem solve literally half a world away. So, it's the value of the network to me, and I would hope that people newly arriving to the association would also find that to be a value.

Alshurafa:
So, if you were to recommend a new graduate to a member society, what would you tell him or her about it?

Heinz:

Get involved. Get active. Learn from other people that have been at it a little longer than you have. There's a tremendous number of highly talented professionals in our industry, most of whom are willing to help you if you just say, I need some help. Use their knowledge to further your understanding of the business and make yourself a more effective team member wherever you participate.

Alshurafa:

Wonderful, and, in your opinion, what can we do to...?

Heinz:

I'm sorry to step on that because there's one other thing I think is important for newly arriving associates, and that's to listen, and listen well because people have a wealth of knowledge, they're willing to share, if you're willing to listen.

32:37 Growing the Steel Industry - More than a Rust Belt Business

Alshurafa:

Dale, in your opinion, what can we do to attract young people to the industry today?

Heinz:

Somehow, lose the stigma of being a rust belt industry. We're using a great deal of new technology, robotics, virtual reality, computers, programmable logic controllers, that should excite young professionals very much. Additionally, I think when a young associate has been successfully recruited, it's really important to challenge that person with meaningful work assignments. These are bright,

incredibly talented young professionals and minds, and the more they are challenged, the more engaged they'll become in our business.

Alshurafa:

That does sound exciting. Dale, I'd like to ask a question. I see the AIST pin on your jacket.

Heinz:

Proudly worn, proudly worn.

Alshurafa:

That's great. But there's another pin right next to it. What's that about?

Heinz:

Can you see what it is? What does it look like?

Alshurafa:

It looks like a blue fish, mackerel, I don't know.

Heinz:

Yes, so it is, in fact, a pin that signifies that I have joined the Society of Dead Mackerels. It's a very elite club of former Chairman of the Board for the American Institute for Mining, Metallurgical, and Petroleum Engineers. It really verifies that I've passed into the land of has-beens. There's a ceremony that goes along with being bestowed. It's a very solemn ceremony, requires a precise number of words to be spoken in a precise order. This is no small deal here. This is also proudly worn.

Alshurafa:

Oh, wow. That's fantastic. Dale, is there anything else that you can share with us regarding your time at AIME?

Heinz:

Yes. I think I would like our members of AIST to understand the legacy we share through our parent organization, AIME, and the Iron and Steel Society. We have participated, contributed to the building of the Panama Canal more than 100 years ago. We have a letter from the American President Taft thanking us for our contribution when we came really to the rescue of the people that were there in construction and engineering that were struggling to get the job done. We share in that legacy. We also can boast that an American president was a member of our ranks at one point in time, President Herbert Hoover. So, that's a tremendous legacy that AIST shares with AIME.

Alshurafa:

That's a fascinating story, and it seems like a significant contribution to the American history.

35:25 Relationships and Problem Solving - The Value of Working in the Steel Industry

Alshurafa:

What has made working in this field meaningful to you, and what has been your favorite part of working in the field?

Heinz:

So, beyond question, it's the relationships I've built with some truly magnificent teammates and colleagues from other companies along the way. Beyond that, the problem-solving aspect of what we do is something that I find very appealing. I can say for 45 and a half years that my mind was fully engaged at all times. For 45 and a half years, I worked in the mills, I've never been bored. I like that. I like problem-solving. I tell young associates today whenever they're down in the mouth about this problem or that; I go, we're hired to be problem solvers. If there were no problems, there'd be no jobs. So, this, to me, was very appealing.

Alshurafa:

That's very true. So, great advice for them, and, then, if you would give them one more tip to young leaders and engineers in the profession, in our industry today, what would you tell them?

Heinz:

Find a way to keep your skills fresh and renew them on a regular basis.

36:49 Plastic Injection – Providing a Valuable Alternative to Plastic Waste

Alshurafa:

Is there anything else, or stories that you'd like to share with us, discuss, prior to concluding our interview?

Heinz:

I'd like to discuss plastic injection for a little bit. I've been working on this project for a long time now, and it's very close to coming to be a reality. But we haven't quite pushed it over the finish line. Plastic injection in the blast furnace would take waste that you and I throw away routinely and convert it to an alternative fuel source to the blast furnace. It would avoid taking that material to landfill, and ultimately finding itself into the Pacific gyre, where there's this mass of plastic out there, that's getting into our food chain. We can do this. There's a process available to separate different grades of plastic. Some we don't want in the blast furnace and some that we do. But, we can create a fuel out of things we throw away today. So, that, to me, would be an exciting accomplishment. It's enough to get me reinvolved, and now that I've retired, I'd come back in a heartbeat to see this one go forward.

Alshurafa:

I have to say, Dale, this was a fascinating interview and the stories that you shared about your career and life you've had in the industry. It's been a pleasure to spend this time with you. Thank you so much again for your willingness to share your story with AIME.

Heinz:

Karim, thank you. I appreciate your time today.