

Hugh Leggatt finds out how collective care and continuity have brought a remote Rio Tinto operation the top honours in the annual safety awards programme.

Early each year, Rio Tinto executives scan the global horizon for the Group's top safety performers as part of the annual Chief Executive's Safety Awards. This year as they started their search, the spreadsheets pointed to a northern outpost of Rio Tinto's worldwide operations.

An operation called ISAL, which stands for Iceland Aluminium, had zeros jumping out from the top of the data table. This deserved a closer look. So Rio Tinto's London based

assessment team set off for Reykjavik. They slipped through the disruption that grounded flights all over Europe due to the ash plume from the erupting Eyjafjallajökull volcano, a spectacular sight they saw from their plane.

What they also saw on this northern island just below the Arctic Circle was a sleek and cleanly impressive aluminium smelter set against a stunning backdrop of ocean and desolate volcanic rock just south of Reykjavik. Good housekeeping usually indicates safe working, and ISAL's plant, seen from the busy highway that passes it, looked the part.

Rio Tinto acquired ISAL as part of Rio Tinto Alcan in 2007. A 190,000 tonnes per year contributor to the Group's aluminium metal output, it is one of three aluminium smelters in Iceland.

Along with fishing, the island's main export earner, aluminium is one of Iceland's most

Safe haven



Alongside safety, environment is a key issue for ISAL. Gunnar Ari Gudmundsson leads the team that has achieved the some of the lowest greenhouse gas emissions for smelters anywhere in the world.

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important industries, fuelled by abundant green energy – hydro and geothermal, from all that volcanic activity. ISAL runs entirely on hydroelectric power, purchased from the state grid.

ISAL was started by the Alusuisse Group of Switzerland in 1969 and was acquired by the Canadian producer Alcan in 2000, before ending up in the Rio Tinto fold. One remarkable strength which the assessment team found had contributed to the overall development of a strong safety culture was the continuous tenure of the general manager, Rannveig Rist.

A staunch Icelander, she has been general manager for 14 years and started working for ISAL in 1990. It is an impressive length of time that has engendered a high level of trust and credibility among the leadership team, an important aspect of safety performance. She is credited with providing a very strong influence on safety culture, providing a consistent message and backing her message by “walking the talk” and setting an example for her leadership team.

She was absent from site when Rio Tinto’s safety chiefs visited, but says she was confident enough to leave the briefings and plant tour to her people and let the record speak for itself.

Over the years, keeping people safer has massively improved at all Rio Tinto sites, including ISAL. Rannveig says at ISAL in 1997 there were 52 lost time incidents, equivalent to one every week. In the Rio Tinto Group as a whole, 1997 saw eight fatalities and 1,124 injuries.

Except for an incident in 2009, ISAL has had zero injuries since 2007, and now boasts 4.7 million workhours without a lost time injury. Taken that Iceland as a whole does not compare favourably with other European nations in terms of industrial fatality rates, ISAL’s is a stellar performance, a haven of safety.

It was the first company in Iceland to achieve OSHAS 18000 (an international occupational health and safety standard) and has the best safety record of Iceland’s aluminium smelters. This year it won Rio Tinto’s top safety award, the first year it was eligible to do so. It shared the honour with Rio Tinto Coal Australia’s Hail Creek coal mine in Queensland.



Measured against the aluminium industry in Scandinavia, which Iceland regards as its cultural homeland, ISAL is one of the best safety performers. Its 450 employees – 20 per cent of whom are women – produce aluminium sheet ingots in numerous combinations of alloys in various dimensions, mainly for the European market, from the intermediate product alumina, which is shipped in from around the world.

Hand in hand with safety, ISAL is also attracting investment from Rio Tinto. After reaching a long term energy supply agreement this year, ISAL announced plans to modernise and increase production capacity by 20 per cent, and to build a new leading edge casting facility to produce value added billet, at a combined cost of US\$487 million.

Situated in a cold latitude in the turbulent North Atlantic, by ironic contrast Iceland occupies a “hot spot” on the Earth’s mantle – a relatively young land about the size of England and Wales, built by eruptions on the North Atlantic Ridge. Though its interior is largely covered in a sheet of ice, it also enjoys a relatively moderate climate due to the warm North Atlantic current.

The wilderness goes with a hardy and independent lifestyle which does not appear to lend itself to the creation of a careful, caring safety culture, especially one that could propel an operation to the top of the charts of an intensely safety aware global group like Rio Tinto.

This is what the assessment team from Rio Tinto found interesting. “The Icelander has a love of fishing and outdoor activities,” says Suresh Rajapakse, a senior safety executive who went on the assessment. “They are go getters with a low fear level and a high tolerance of

Photo: Anna Maria Sigurjonsdottir



Anna Jóna: "It was a great effort for me to start school again. But the support and motivation from my colleagues made it a great success."

risk. However, fishing in the North Atlantic is one of the most hazardous things going. It results in an attitude that makes people accept fatalities as inevitable.

"ISAL had to challenge that thinking and break away from it. They did it through the selection process at recruitment, bringing in greater hazard awareness, teaching recognition of unsafe conditions and highlighting unsafe acts."

An unusual contributor to building the safety culture is ISAL's specialised on site vocational school formed in 1998. Employees are educated about the aluminium industry on two levels, basic and, for skilled employees, advanced. Studies are both technical and theoretical.

The objective is to enhance employee skills, knowledge and abilities in traditional courses, like mathematics, physics and English. Participants must pass tests at the end of most of the courses. There is also requirement for creative thought, initiative, communication skills, and, critically, health, safety and environmental awareness.

Anna Jóna was a student in the basic and advanced levels. She has worked at ISAL since 1995. "I grew up in the country and did not get much education," she says. "I ended my school attendance when I was 13 years old and have after that always worked as a manual worker, mainly in freezing plants.

"When I came to ISAL I started as a worker in the canteen. Three years later the vocational school started and it was a great effort for me to start school again. But the support and motivation from my colleagues made it a great success." Anna is now shift foreman in the smelter potrooms. Research into school results has shown that

employees are more satisfied in their jobs. ISAL's job turnover is a very low 3.5 per cent.

Iceland's population of more than 300,000 descend from Scandinavian seafarers. They speak Icelandic, a North Germanic tongue unique because it has changed less from Old Norse than the other Nordic languages. Icelandic is the language of the ISAL plant but many employees and managers speak good English, giving them a window on the world of further education and access to global leading practices. "It is convenient to us that Rio Tinto works in English; it gives our people additional opportunities," says Rannveig.

She acknowledges that the adoption of Rio Tinto's safety practices has helped ISAL achieve recognition. "We started an aggressive and focused long term campaign over a decade ago to reduce incidents. The key to success has been the firm conviction that success was indeed possible. Leadership and individual commitment is also important, as is the strong support we have enjoyed from our colleagues at Rio Tinto and Rio Tinto Alcan."

She appreciates the support of the "mother company" and says ISAL is well on the way to being fully compliant and aligned with the Rio Tinto safety standards. She ascribes the successful safety record to strong leadership, clear direction and zero tolerance.

There is a carrot and stick approach to addressing collective and individual behaviour: applying a bonus system based on housekeeping and proper use of personal protective equipment, making daily safety inspections, conducting frequent safety meetings and monthly audits, and identifying the biggest hazards on site.

Developing a safety culture shifts responsibility for safety from management to the shop floor. In the past the approach was about supervision; a top down mandate in which safety is a condition of employment and there is control and fault finding. The next stage of development moves to the self, where a personal commitment is made, incentive is provided for good outcomes and people focus on and monitor their own behaviours.

However, to achieve the safety nirvana of zero injuries, experts agree that it should be an interdependent joint effort between management and employees: empowerment of individuals to care about others and provide coaching and feedback, and a shared team commitment to the cause of safety. These characteristics of the ideal safety culture contributed to ISAL winning Rio Tinto's Chief Executive's Safety Award.

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