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William "Ike" Eisenhower
Portland State University

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An admiral and courageous impatience

By William "Ike" Eisenhauer

As a young college student, I never imagined myself working in healthcare. During my sophomore year in college, I had the honor of being selected to join the U.S. Naval Nuclear Power Program. My job was to teach the engineering concepts behind the operations of a naval nuclear reactor.

However, what I learned being embedded in that unique culture was the philosophy of a highly respected and controversial man, Adm. Hyman G. Rickover. His was a philosophy of high reliability, accountability and practical real-world engineering that healthcare, as well as nuclear reactor operations, demands.

Rickover's reputation is legendary, if not familiar to many. I would suggest Theodore Rockwell's *The Rickover Effect*, published in 1992 by the Naval Institute Press. Rickover is well-known as a real-world engineer. In testimony to Congress, Rickover described the difference between an academic and a practical reactor, a comparison that many of us working in healthcare engineering would equally attribute to healthcare systems:

"An academic reactor ... almost always has the following basic characteristics: (1) It is simple. (2) It is small. (3) It is cheap. (4) It is light. (5) It can be built very quickly. (6) It is very flexible in purpose. (7) Very little development will be required. It will use off-the-shelf components. (8) The reactor is in the study phase. It is not being built now.

"On the other hand, a practical reac-

tor can be distinguished by the following characteristics: (1) It is being built now. (2) It is behind schedule. (3) It requires an immense amount of development on apparently trivial items. (4) It is very expensive. (5) It takes a long time to build because of its engineering development problems. (6) It is large. (7) It is heavy. (8) It is complicated."

This sums up many of the situations that we face as engineers in healthcare

Imagine a healthcare system safety record of zero incidents in more than 60 years.

systems. Even Rickover's philosophy of engineering ethics was grounded in the same Hippocratic oath that healthcare professionals take. His view of the proper operation and engineering of a nuclear reactor plant was one of high reliability. This view is very much desired in healthcare, yet to this day it remains somewhat elusive.

I would challenge those engineers and other professionals working in healthcare today to take some time to examine Rickover's philosophy and see where we can make healthcare systems as reliable, safe and efficiently effective as the Navy has made nuclear power. A good place to start is with his 1982 speech to Columbia University.

Imagine a healthcare system safety record on par with that of the Navy's nuclear power program – zero incidents

in more than 60 years. What better industry than healthcare should strive for a safety and reliability record on that level?

It will not be easy, as my training in the Navy's nuclear program was the hardest I ever had. But it was not the technical parts that were difficult, it was the paradigm shift to a whole new way of viewing organizations, systems and the world that Rickover created.

Operating consistently under those conditions to achieve what no other industries have, although many industries should, requires a certain characteristic. This characteristic is best described by Rickover's quote that is included in an exhibit at the U.S. Navy Museum, "Good ideas are not adopted automatically. They must be driven into practice with courageous impatience."

Those good ideas we all have as industrial engineers in healthcare need to be driven into practice, and that is going to require a large amount of courageous impatience. ❖

William "Ike" Eisenhauer is an engineering professor at Portland State University and national director of the Veterans Engineering Resource Centers for the Veterans Health Administration. His interests are integrating engineering and healthcare professionals to increase the value of health systems and advancing engineering science to address healthcare delivery challenges. He can be reached at wde@pdx.edu.

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