

Nuclear energy book enlightening

by Ellsworth Dickson

When I received *Seeing the Light: The Case for Nuclear Power in the 21st Century* – I was expecting a great deal of information on technology and science. That is the case; however, the book is also loaded with enlightening information concerning war, politics, human health, various alternative energies, climate change and ideas for a clean future.

Written by geoscientist Scott Montgomery and diplomat Thomas Graham Jr., *Seeing the Light* takes the reader through the paradox of how the peaceful use of nuclear power started out as a weapon. This put the Atomic Energy Commission in the awkward position of having one foot in the military sector and the other in promoting electricity derived from the atom that led to the public hav-

ing distrust, confusion and fear regarding nuclear energy.

The authors discuss the many things wrong with coal-powered electricity generating plants – and not just their CO2 emissions. In addition to CO2, coal plants emit sulphur dioxide, nitrogen dioxide, hydrocarbons, small particulate matter, ash, sludge, carbon monoxide, lead, cadmium, arsenic and heavy metals. During 2014, coal accounted for 41% of global power generation.

The massive coal use in China’s eastern cities “means that every year more people die in China from air toxicity than all American deaths in World War II.”

The quandary facing developing nations – and even some advanced ones – is that coal is inexpensive, plentiful and reliable.

The authors note that alternative energies have their place – but not for base load power; hence, they believe that nuclear energy is essential for future clean power.

A number of countries already realize this. Starting in 2017, there were 449 nuclear reactors operating around the world with 60 under construction – eight were retired. Some people expected that post-Fukushima many nuclear power plants would be shut down; however, that did not occur. Despite the tragic headlines in the media regarding deaths at Fukushima, when one looks into it, the deaths were due to the tsunami slamming into the coast and not radiation poisoning.

Even though some favour going the 100% renewables route, this is wishful thinking since high-efficiency solar and large-scale energy storage do not exist. It is only nuclear reactors and hydroelectric dams that can store vast amounts of base load power.

The authors point out that: “Despite hopes and dreams that a ‘green revolution’ will take over the world in a few short decades, no serious analysis today shows anything like this happening. The most non-hydro renewables are expected to do by 2040 is about 15% to 20% of world power generation, and even this will not be easy to achieve.”

The authors note that most of the world is energy poor. Lack of electricity impacts food storage (refrigeration), water distribution, disease, life expectancy and economic opportunity. Many areas suffering from energy poverty rely on women and girls – over 2 billion around the world – to collect wood and dung for cooking. Nuclear power could help alleviate this sad situation. While the authors are aware that nuclear power plants are not inexpensive, they present various ideas to foster nuclear development. ■

Published by Cambridge University Press.

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